

NIDCD Web Site Usability Review Final Report

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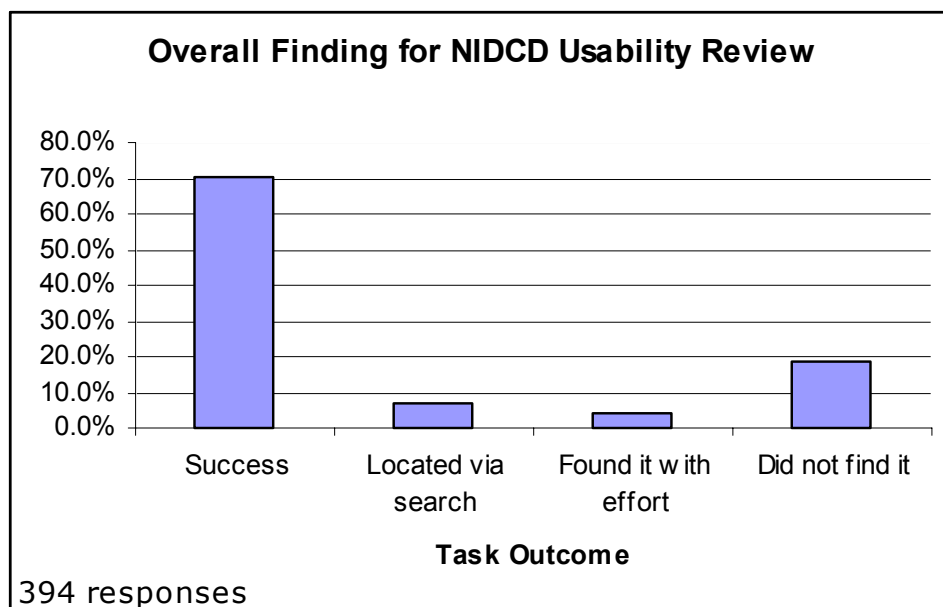


Executive Overview

Human Factors International conducted a Web Site Usability Review for the National Institute of Deafness and Other Communication Disorders in October of 2002. During this process, HFI evaluated the self-evidency and ease-of-use of the NIDCD public Web Site by observing members of representative user groups (Researchers/Health Professionals, Public/Educators, students, parents of children with disabilities, individuals with disabilities) perform tasks on a working prototype of site. During the evaluation, participants were asked to locate specific examples of four general types of information: General Resource Information; Health/Caregiver Information; Science and Training Information and Funding Information.

Participants in the study were encouraged to navigate the site, rather than use the search engine to find each item. For the purposes of this study, successful outcomes include any instance of finding the requested information within a reasonable time frame and with minimal frustration. Therefore, both click-navigation and search engine methods represent valid information-finding strategies.

Overall, the site evaluated well: Participants located requested information 73% of the time (weighted average), as can be observed below.

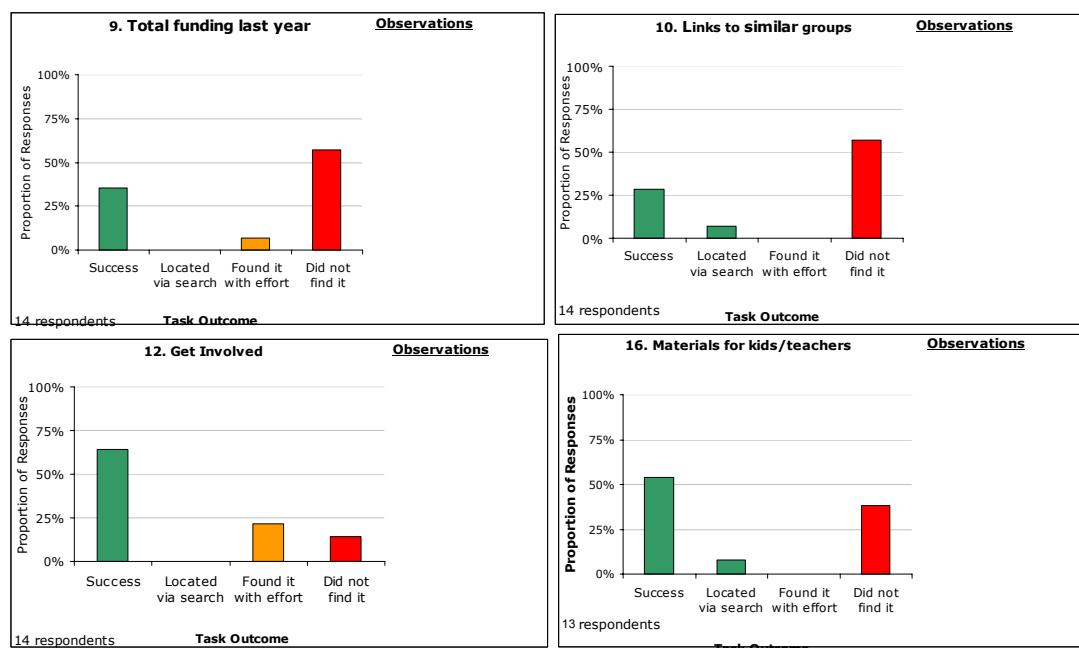


This level of participant-information finding success reflects a significant effort on the part of the Web Team to develop a navigable and intuitively organized site. The result compares favorably with the 68% success rate in the previous testing.

Most of the participants made positive comments about the site. They liked the kind of information it contained, and had a positive experience finding the information we asked them to locate.

During the study, the interviewer noted points of common confusion or frustration for users. These points indicate areas of possible improvement for the site. As an example, participants didn't always see a clear distinction between research and general or health topics, based on the organization of the home page.

As is shown below, participants had the most trouble finding general information intended for the public, rather than the medical and research communities. Here are some examples:



This frustration results in part from the categorization of topics, and in part from the layout. There is no single category that delineates the general information about the agency, or organizes the information that would be of most interest to the general public. This information is in three different columns on the page: Health Information, Latest News, and About Us.

The participants also had trouble locating the Free Publications link, because of the placement of the link on the home page. HFI suggests moving this link to a better place, perhaps in conjunction with the Subscribe section, which had excellent visibility.

On the other hand, participants found many of the front page items very reliably, including the Spanish language link, in spite of it being embedded in a list of other items, and the email subscriptions. Placing the email subscriptions on the home page in a prominent place proved an excellent strategy for getting it noticed, and for reducing the amount of work a user has to do to get on a mailing list.

The participants used the links on the home page to get to third level pages, as intended. However, they saw so little of the secondary pages that they did not understand their relation to the home page and lower pages. The breadcrumbs did not appreciably alleviate this problem.

By exploring these and other user-centered strategies to improving the site outlined in the full report, NIDCD can further enhance the usability of the Web Site. Enhancements strategies include:

- Adjusting the home page layout to group research and non-research topics
- Elimination of the health topics dropdown list, in favor of showing all of the topics as menu items.
- Improving people's access to the secondary pages.
- Adjusting language and vocabulary based on the test results
- Giving Free Publications a more prominent place on the home page.

The full report highlights examples of these improvement strategies.

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NIDCD Usability Report

1.1 Introduction

Human Factors International conducted a Web Site Usability Review for the National Institute of Deafness and Other Communication Disorders in October of 2002. During this process, HFI evaluated the self-evidency and ease-of-use of a wireframe NIDCD web site by observing members of representative user groups (Researchers/Health Professionals, Public/Educators, students, parents of children with disabilities, individuals with disabilities) perform tasks on a working prototype of site. During the evaluation, participants were asked to locate specific examples of four general types of information: General Resource Information; Health/Caregiver Information; Science and Training Information and Funding Information.

Participants in the study were encouraged to navigate the site, rather than use the search engine to find each item. For the purposes of this study, successful outcomes include any instance of finding the requested information within a reasonable time frame and with minimal frustration. Therefore, both click-navigation and search engine methods represent valid information-finding strategies.

HFI worked with Eagle Design & Management to fine tune the empirical review tool used in the previous round of testing, to evaluate the user experience. Using these methods, the user experience is evaluated based on direct observation of users navigating the NIDCD Web Site to accomplish tasks that real users of the site frequently complete. Since several significantly different user populations were identified, the protocol included tasks specifically for medical professionals and potential grant recipients, as well as members of the public with in interest in NIDCD's domain.

By conducting a Usability Review, we expected to uncover a number of points for improvement of the NIDCD site. These points of improvement are identified as those pages or tasks on which participants are commonly confused or in which they stumble or become frustrated with the task. Identifying these points allows the NIDCD Web Team to implement fixes that should improve the overall experience that users enjoy on the site, prior to the site making its public debut.

1.1.1 Methods

HFI helped to refine the Moderator's Guide (included in Appendix A) consisting of 42 information-seeking tasks. The tasks were derived from both general goals of individuals who would use this site and the specific communication goals of NIDCD. We interviewed each subject to gather information about their job and background, with the goal of understanding their knowledge and use for the information contained in the NIDCD site. We also asked them about their computer experience. All of our subjects had at least moderate computer literacy, appropriate to the demographic of the expected users, which ensures that our results were not biased by subjects who where learning how to use a mouse or a browser during the test.

Not all tasks were given to all participants. The Moderator's Guide consisted of several sub-sections. The main section included general information/resource questions about NIDCD, its mission and its activities. Other sub-sections included targeted questions designed to elicit deeper probing by individuals within NIDCD Web Site user sub-groups. As such, the

Usability Review investigated the ease of finding both general information and targeted, domain-specific information particular to expert user groups. Example tasks included:

General Health Information

- Can you order an information pamphlet about dizziness on this site?
- Are there any interactive demonstrations for elementary school kids on the site?

About NIDCD

- What is NIDCD's overall research budget?
- What jobs are available at NIDCD?

For Health Professionals

- Does NIDCD provide any information or resources that you can distribute to your patients?
- Is it OK to photocopy NIDCD materials??
- How would you find information written in Spanish for your patient?

Funding Research

- Where would you look to find out the types of research or research topics that NIDCD would be likely to fund??
- Are there any special funding or training programs to support scientists with disabilities, deaf scientists, or minority scientists??
- Where would you look on the site to find potential collaborators for a research project?

Participants: HFI recruited fourteen individuals to participate in the user evaluation. See Appendix B for the screener which describes the recruiting criteria.

Due to the small numbers of individuals in sub-groups, no within group analysis was computed.

Methods: Participants were interviewed individually in a sound attenuated room containing a PC and video equipment. During the interview participants were asked to seek specific information on the NIDCD Web Site, per the moderators guide. Participants were encouraged talk aloud as they explored and to navigate with the mouse rather than using a search engine to seek out the information. When subjects used the search engine, we generally asked them to find the information by navigating, as well, to get the most data from each subject.

If participants failed to locate the requested information in a reasonable timeframe or if they became obviously frustrated, they were directed to the next task.

At the end of the interview session, participants were encouraged to ask questions and voice general opinions or concerns relating to the Web Site and to their experience in the User Review.

Interview sessions lasted approximately one hour each and were video/audio recorded for later analysis or review.

1.2 Findings & Discussion

Overall, the site fared reasonably well. Participants were able to find the requested information without undue frustration 73% of the time (weighted average). Calculated the same way, this compares favorably with 68% success in the previous round of testing. This success reflects the efforts of the Web Team to improve the intuitiveness and navigation of the site.

Terminology, which had been an issue in the previous version, caused little trouble or comment in this round of testing. Although respondents did make some suggestions, such as providing common names for medical terms, e.g. "Otitis Media (ear infection)." Curiously, highly technical people concerned about how comprehensible the technical terms would be to non-technical users, but the non-technical respondents were not troubled by the terminology, nor did they think that others would be.

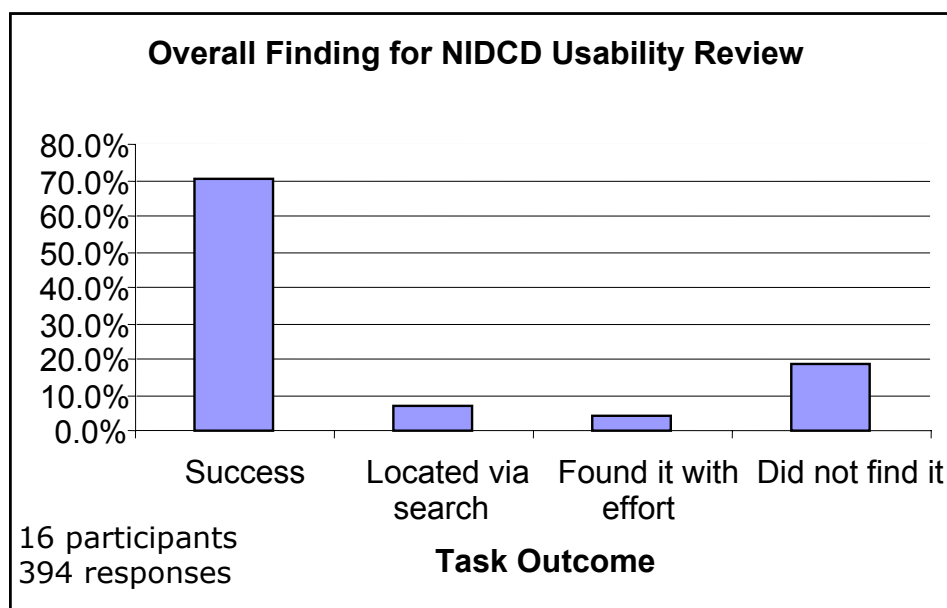
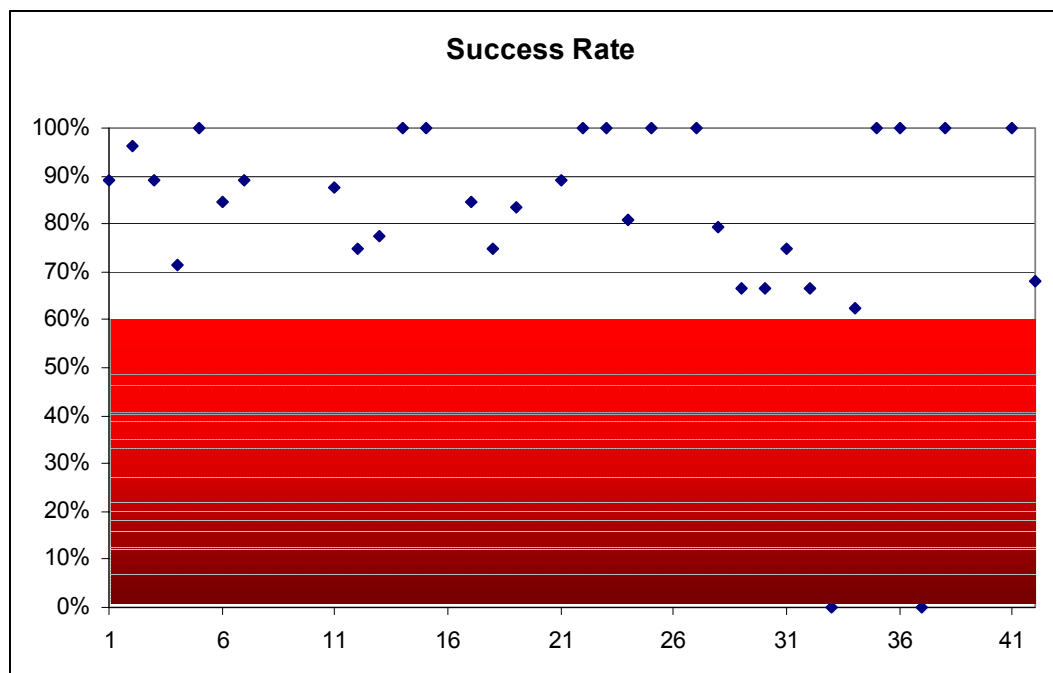


Figure 1: Usability Review Results Overview

While a weighted success rate of 73% reflects a significant effort and success, this also indicates that participants failed to locate the requested information for approximately one-fourth of the tasks they attempted. However, most of the failures were associated with the same tasks. This offers the prospect of improving the site with respect those tasks and achieving a much higher overall success rate.



These are the questions that had less than 60% success scores:

8	Does NIDCD have physicians to diagnose an individual's condition?
9	Please find information about how much research funding was provided by the NIDCD last year.
10	How would you find links to other groups interested in similar health problems?
16	Please find any resources or projects for elementary students on the site.
20	Is it OK to photocopy NIDCD materials?
26	Do individuals working at NIDCD focus strictly on basic research, or do they also participate in clinical research?
33	Are there any grants that are specifically for new/young investigators?
37	Are there any new or targeted grant opportunities at NIDCD this cycle
39	When is the next grant deadline?
40	Can you find the names of the individuals who will review your grant proposal?

1.3 Recommendations for Improvement

The following section includes both recommendations to obviate specific problems identified by the usability review and to alleviate general frustrations noted over the course of observing the Usability Review. Fixing these problems should have a substantial effect on the overall success rate, and thus usability, of the site.

On reviewing the above list of questions on which people performed worst, we observe that they have much in common. First, many of the questions relate to research and funding (9, 26, 33, 37, 39, 40). Second, several of the questions relate to broad rather than necessarily specific pieces of information (8, 10, 20, 26).

1.3.1 Research topics

Addressing the first problem, with research-related items, a modest rearrangement of the home page would help. HFI observed that subjects failed to see clear distinctions in the front page between research and health topics, and between links to broad, public-oriented and specific, more-technical topic areas.

Therefore, HFI recommends laying out the page to put topics of general interest together. Specifically, we suggest dedicating an area of the page, perhaps the left-hand column, to health topics.

Similarly, news stories are for general consumption, of interest to most visitors whether members of the public, physicians, or researchers. These stories need to be delineated better on the page, so as not to be specifically associated with technical materials for doctors and researchers.

The screenshot shows the NIDCD website layout with several annotations in speech bubbles:

- Top Navigation:** [Health Information] [Research at NIDCD] [Funding for Research] [News and Publications]
- Health Information:** Includes a dropdown menu for "Popular Health Topics" and a list of links: Hearing, Ear Infections, and Deafness; Balance; Smell and Taste; Voice, Speech, and Language; Información en español; Science Education.
- Research at NIDCD:** Includes links: Areas of Research; Faculty; Studies Seeking Patients; Training and Employment; Research Resources.
- Funding for Research:** Includes links: Applying for Grants; Types of Funding; Funding Opportunities; Funded Research.
- Latest News:** Includes links: NIDCD-supported Scientist Wins Award to Improve Science Education (9/20/02); New gene linked to deafness in humans, mice (9/03/02); Key to lifelong hearing identified (8/21/02). A "More news >>" link is also present.
- Do You Know?:** 75% of children experience an ear infection by age 3. [More about ear infections >>](#)
- WISE EARS!:** You can [Prevent Noise-Induced Hearing Loss >>](#)
- Subscribe:** Includes checkboxes for "NIDCD Newsletter" and "Press Releases", and a "Your email:" field with a "Go" button.

Annotations:

- A speech bubble pointing to the "Latest News" section says: "In the final layout, make News more visibly separate from research & funding."
- A speech bubble pointing to the "Do You Know?" and "WISE EARS!" sections says: "These are health & general topics. Put them with Health Info."
- A speech bubble pointing to the "Research at NIDCD" and "Funding for Research" sections says: "There also was confusion between research and funding. Although this distinction is a clear administrative one for NIDCD, it was hard for our respondents to classify some queries according to this distinction."

1.3.2 Research vs. Funding

There also was confusion between research and funding. Although this distinction is a clear administrative one for NIDCD, it was hard for our respondents to classify some queries according to this distinction.

For example, to find out what kind of research NIDCD funds, you might look in the funding section for an overview statement, or you might look at the current research to see what's

going on currently. Another example is that it is common for researchers to identify people and laboratories rather than grants when looking for collaborators or projects to participate in. This is particularly true for medical students and inexperienced researchers. In this case, too, the dichotomy between research and funding provides too weak a clue as to where to look.

HFI recommends reorganizing the research and funding topics into a single “Research” topic area that includes both currently-funded projects and grantsmanship information.

1.3.3 Broad topics

The problem with the broad topics is somewhat different. People didn’t know where to go to answer these questions because they didn’t seem to relate directly to items on the home page. Because these are important issues for users to understand, HFI suggests that content adjustments be made to address the issues more directly.

For example, question 8, “Does NIDCD have physicians to diagnose an individual’s condition?” is not directly answered on the site. It takes some reading and deduction to answer this correctly, especially because the answer is no. A possible remedy is to include a link at the top of the list of health topics something like “Services NIDCD provides.” This could also be in the “About” section.¹ This would be a good place to set the overall context of the site. It would also be a good place to describe the mix of basic and clinical research, and that print materials and information the web site may be reproduced freely. All of this overview information would help new visitors figure out what the site will and won’t do for them. From the interactions with the test respondents, some additional context setting on the site would be very helpful to most users.

1.3.4 Popular Health Topics pulldown

Although the use of the “Popular Health Topics” pulldown menu did not have a great effect on users’ success with tasks, it did cause problems for our respondents. People either went straight to the pulldown for health topics, or largely ignored it. Some people were confused by “Popular Health Topics” appearing to be the same kind of entry as the live items in the list. These people pulled down the list, looked through the items, and “selected” Popular Health Topics. When nothing happened, they were confused.

Because the items in the pulldown constitute a long list, organized alphabetically rather than by topic, respondents often spent several seconds scanning up and down the list. On several occasions, users missed the item they were seeking in the list, only to find it later, after some frustration.

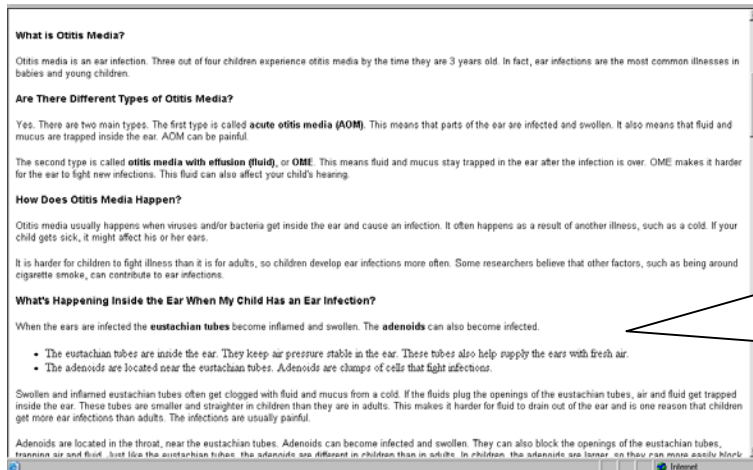
Since the topics are listed are the most common and important ones, HFI recommends listing them out on the home page. This makes them available for inspection and immediate action, instead of requiring time to point at the list and scan through it, before making a selection.

Flattening the list onto the home page also provides the opportunity to organize the items by topic, which would make the selection task easier still.

¹ Although some people went to About Us, most people went to the Faculty section to find out if NIDCD had physicians who would provide diagnostic services.

1.3.5 Too much text

Many of the places users can go below the top level navigational pages are very textual. HFI recommends that NIDCD consider revising the materials intended for the general public. Specifically, we recommend making the text shorter and easier to scan and extract useful information from. Health information intended for the general public would benefit from more illustrations, charts, diagrams, and the like, to make the material more accessible and interesting.



In this example, the text is pretty good, being broken down into small sections with meaningful headings, bulleted lists, etc. Just a couple of illustrations would dramatically improve the appearance and utility of this text.

One additional change would materially improve text presentation: providing narrower columns, which improves the legibility. A "fluid" approach to the layout can be used to limit the line width, or to split the text into two columns when there is too much width for a single line spanning the window.

1.3.6 Site organization & breadcrumbs

The site architecture has three levels: the home page, secondary pages corresponding to the silo buttons (Health Info, Research at NIDCD, etc.), and third-level content pages. Most of the links on the home page lead to third-level pages.

We questioned respondents after performing the test tasks to gauge whether they had internalized the site structure. Only one respondent seemed to have a useful understanding of the structure. The others, if they had seen second-level pages at all, appeared to have a flat model of the site, in which all pages linked from the home page had the same status.

The consequence of this failure to intuit the structure is that users are not getting much navigational benefit from it. Further, it is a source of confusion, because most respondents were unable to predict where the second-level-page breadcrumb link would take them.

The breadcrumbs added further confusion for some people, who learned incorrectly that the breadcrumb showed the path they had taken, rather than the structural position of the page.

Although most respondents used the breadcrumbs for navigation, they almost universally used the "Home" link, rather than the deeper links.

HFI concludes that the breadcrumbs are not providing any value in the design, given the third-level linking from the home page. We suggest eliminating the breadcrumbs. This will have a number of benefits:

1. Users won't be confused by the positional vs. historical interpretation of the breadcrumb sequence.
2. Users will be encouraged to use the silo buttons, and thus get more use from the second-level pages, which provide useful organization of the topics in the site.
3. The home page will better model the information architecture of the whole site, helping users internalize that model.
4. A bit of body space will be freed on each page to make room for more content.

Further, HFI recommends that the titles be links to the second-level pages. There is a one-to-one correspondence of topics (although the About Us section currently looks different). In conjunction with making the silo buttons more important, we would expect users to use the second-level pages more, and develop a more useful mental model of the site structure.

1.3.7 Confusion of About Us and Contact Us

A consistent, but surprising problem that most of our respondents had was being unsure whether to look for things under "About Us" or "Contact Us." This confusion resulted in frequent mis-steps in completing the test tasks.

HFI recommends two remedies:

1. Provide links to important, common tasks in both places.
2. Put important contact information, including the toll-free telephone number, in the Contact Us section, breaking it out by the reason that the user has for making the contact.

1.3.8 Ordering print publications

All of our respondents had some trouble with tasks 6, 18 (if done), and 20. All of these tasks relate to ordering free print materials on the site. Broadly, they had two problems: not seeing the link, and navigating within the order form.

Not seeing the link is surprising, since it's on most pages, right next to the very visible search field. That's why we do usability testing, though—to identify problems we did not anticipate. HFI recommends making the publications link more prominent on the home page by choosing another location for it. We suggest including it as one of the health-related links, or putting it with the email subscriptions at the lower right of the home page.

Either change on the home page raises the question of where to put the publication link on other pages. HFI suggests a dual strategy. First, offer specific publications (or categories of publications) as part of the body text on those pages where the publications are relevant. Second, consider making it part of the standard footer.

It may also help to change the name of the link to "Free Publications." The word "Order" doesn't really add anything, and this wording is parallel with other links on the home page.

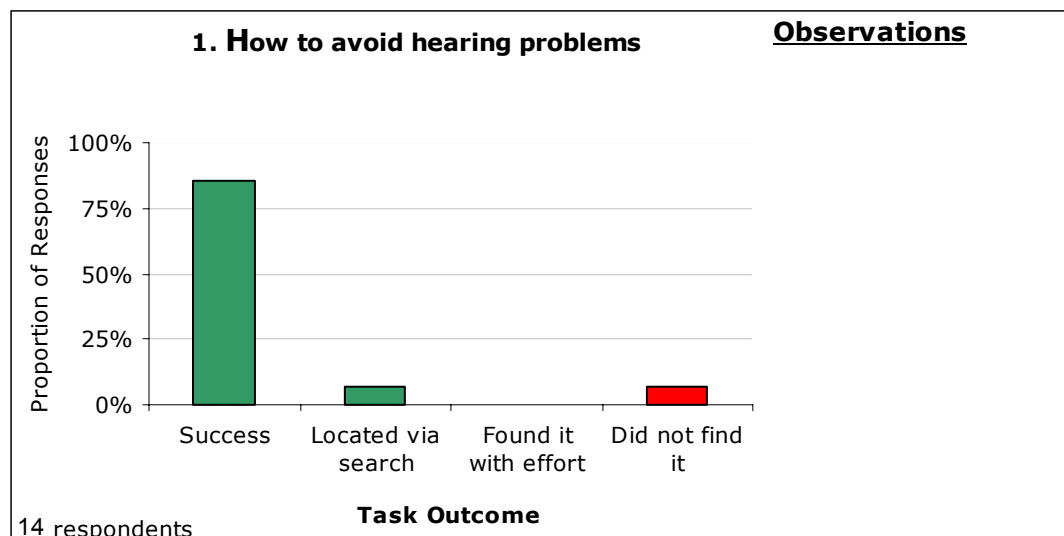
There are a couple of problems with the order page layout. First, the anchor links at the top confused people. Although it is a conventional thing to do, linking farther down the page in the context of an order form this seemed to confuse people. This is a form, rather than an informational page, and the expectations are different.

Second, the page is so long that users lose track of its structure. In the middle, you can't see either the top or bottom of the form, so you have to remember what you're doing. When at the bottom of the page, a couple of people lost track of where they were. In this condition, only two of the checkboxes from the form above showed on the screen, too little context to understand that it was the same page they had scrolled through or jumped down with an anchor link.

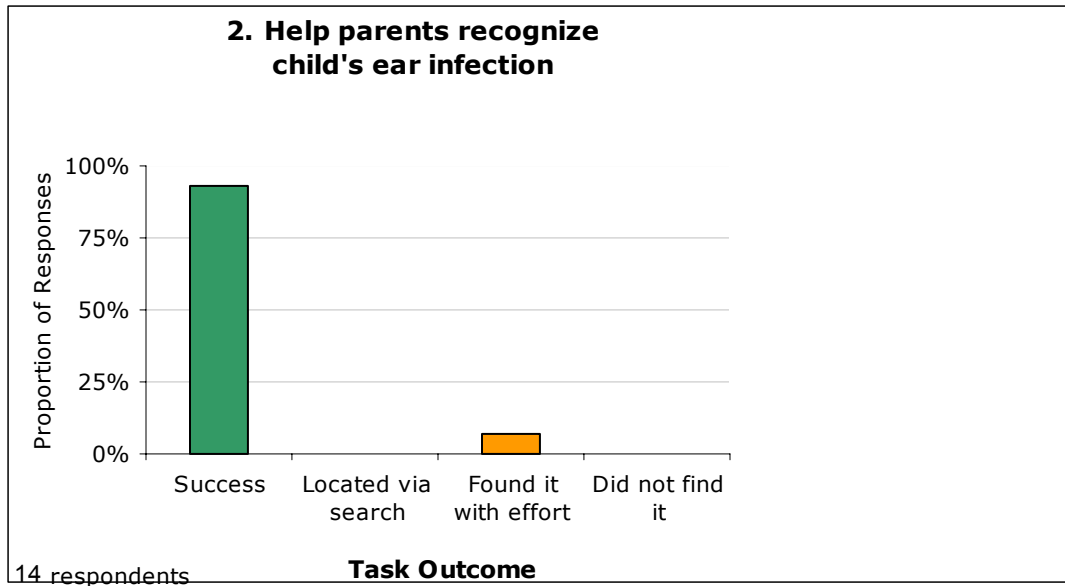
HFI suggests that this page be converted to a paged sequence of steps for ordering, wizard style. The first page can provide general information, and a button to proceed to the selections. The selection pages can then carry enough contexts that the user doesn't lose track of what he or she is doing. They can also be laid out in two columns, making the page easier to scan, and perhaps reducing the number of screen-fulls required to show all of the publications. The final page has the entry fields for the order form.

An alternative would be to use a conventional shopping cart structure. This approach would also allow users to select free publications in context in other places within the site. For example, the sections on ear infections could offer to add those pamphlets to the shopping cart. (Since the publications are free, "shopping cart" is probably not the right term.)

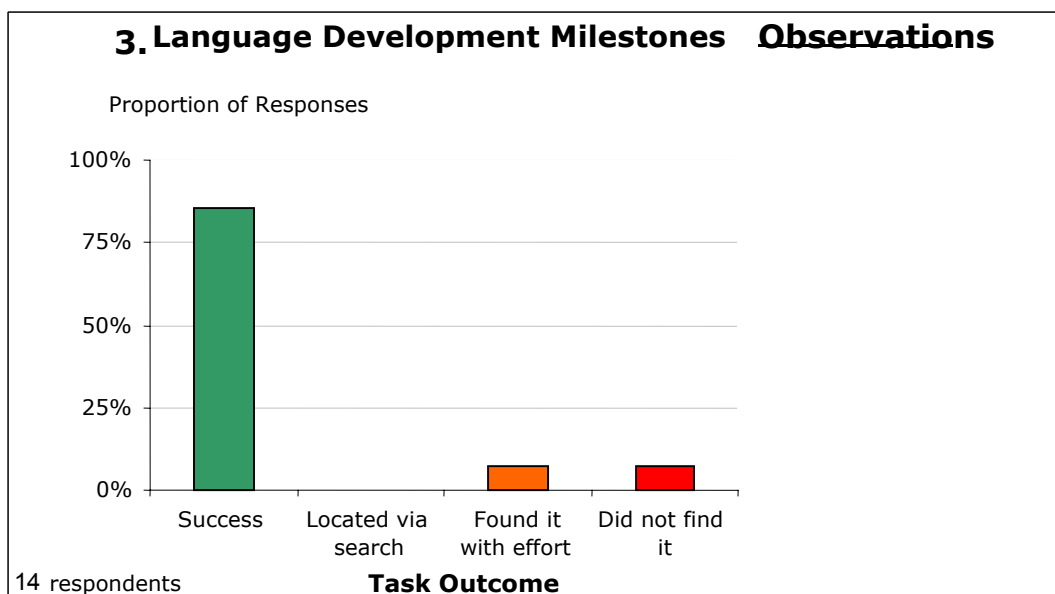
1.4 Results for each task



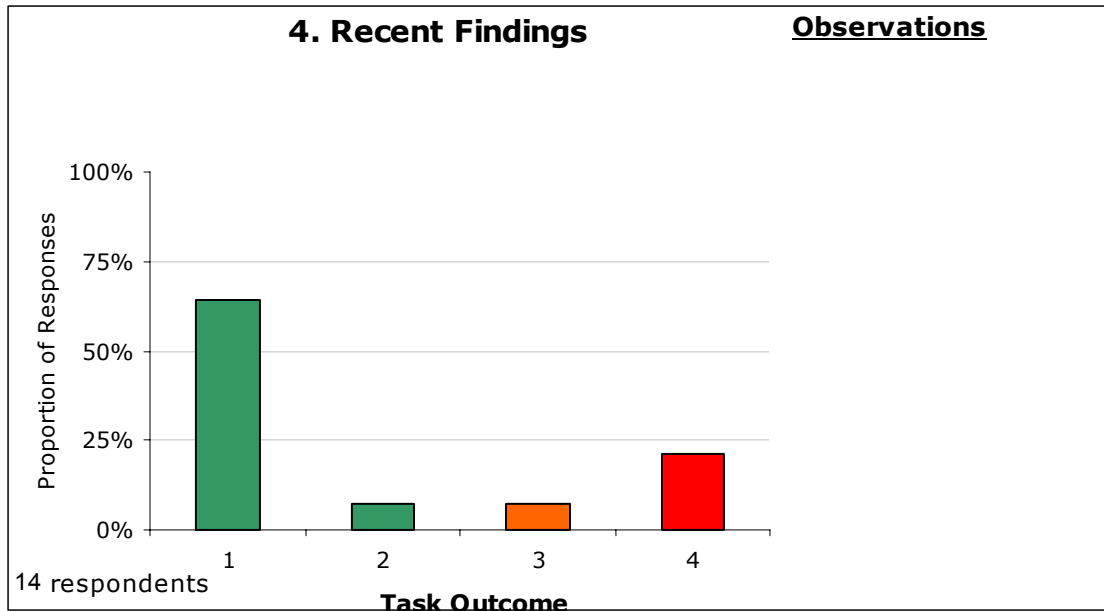
This item was very easy for almost all subjects. Since this was the first question, the few difficulties experienced were probably part of the learning curve of using the home page.



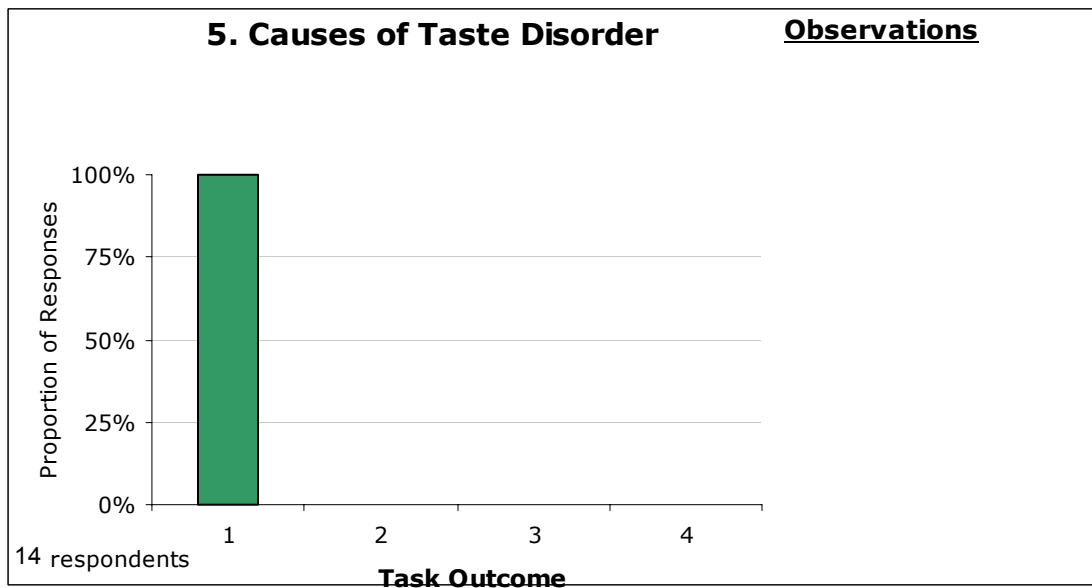
Similarly, participants did not encounter major usability problems for this question. The same comments as for question 1 apply here.



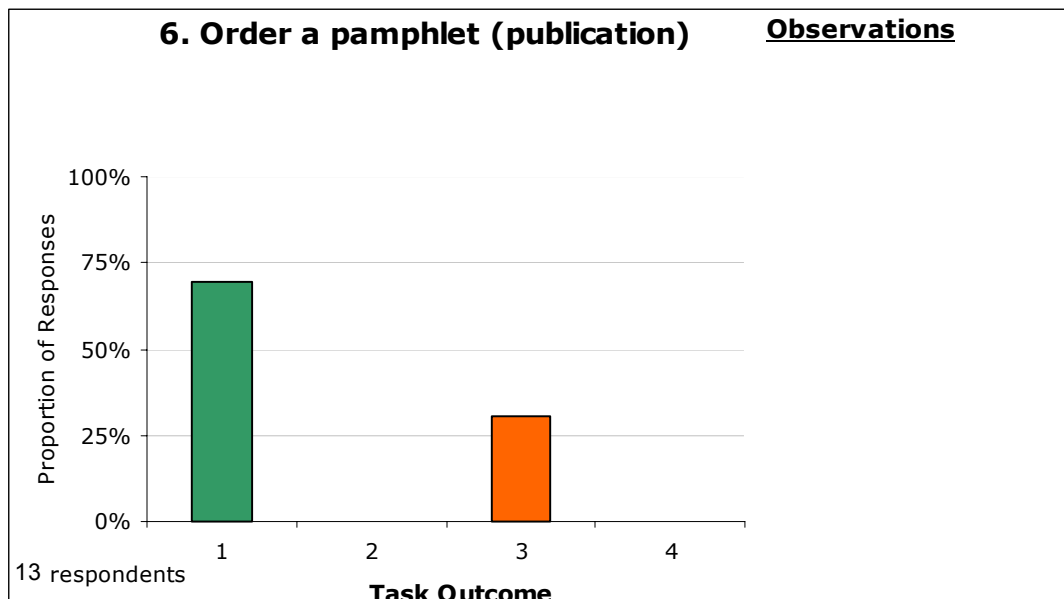
This task proved a little harder for some people. The problem was not navigational, but rather one of terminology. The people who had trouble didn't make the connection between facts of the question and the term "milestones."



The difficulty with this question was a surprise. The subjects didn't relate "recent findings" in the question to News. HFI believes this is a non-issue, because people will just see the news and read what is interesting to them. The task, in this case, is a bit artificial. However, a good option would be to include recent findings from research under the topic, as most participants went to the topics first, and then looked for a way to see the latest research for that topic.

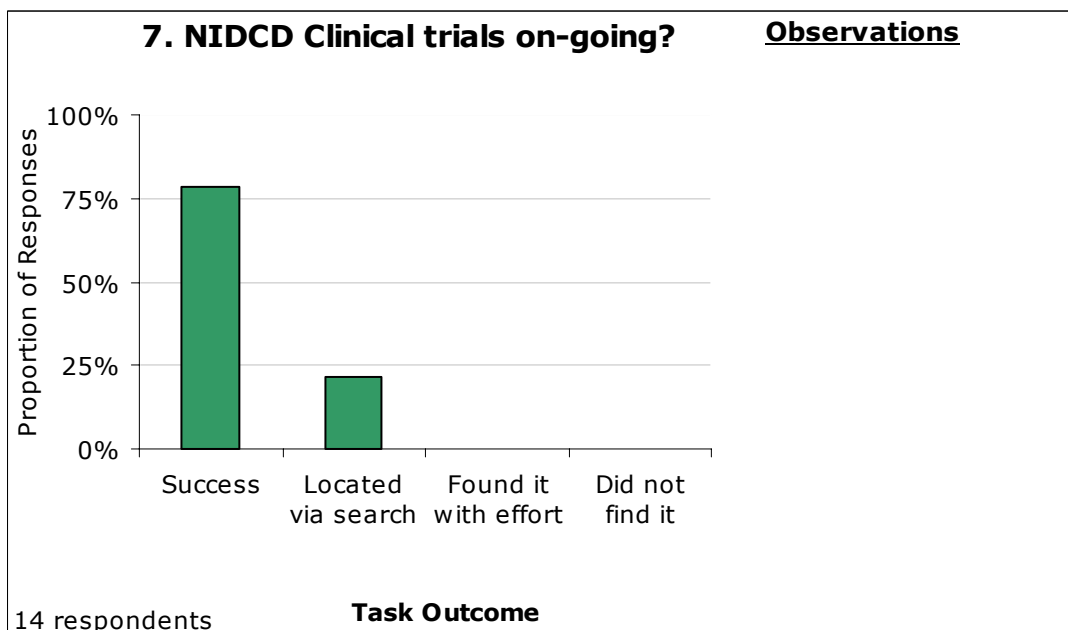


All respondents went right to this.

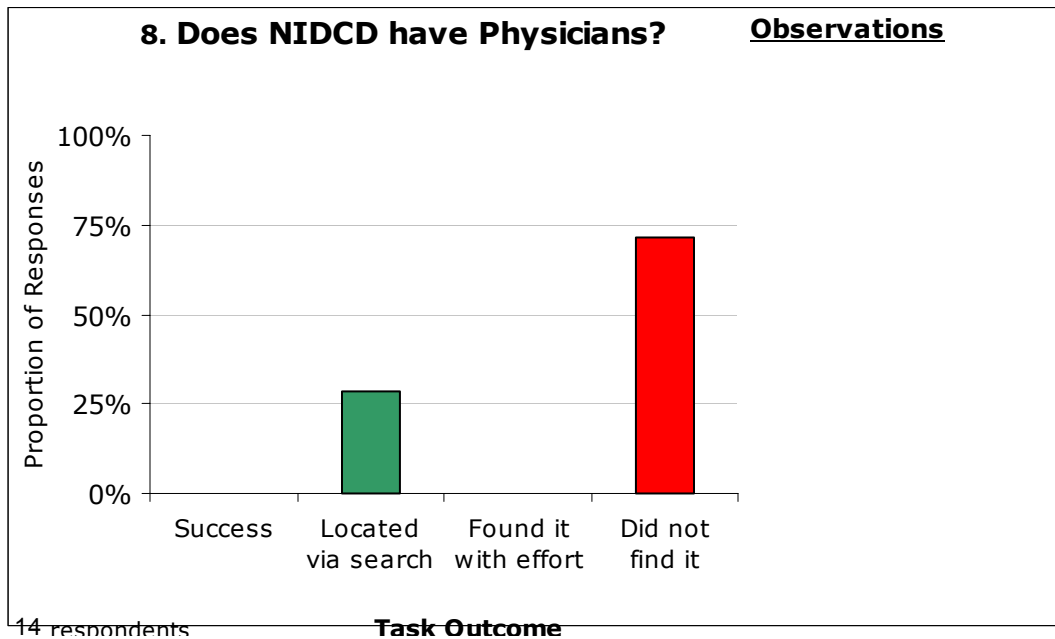


(Discussed above.)

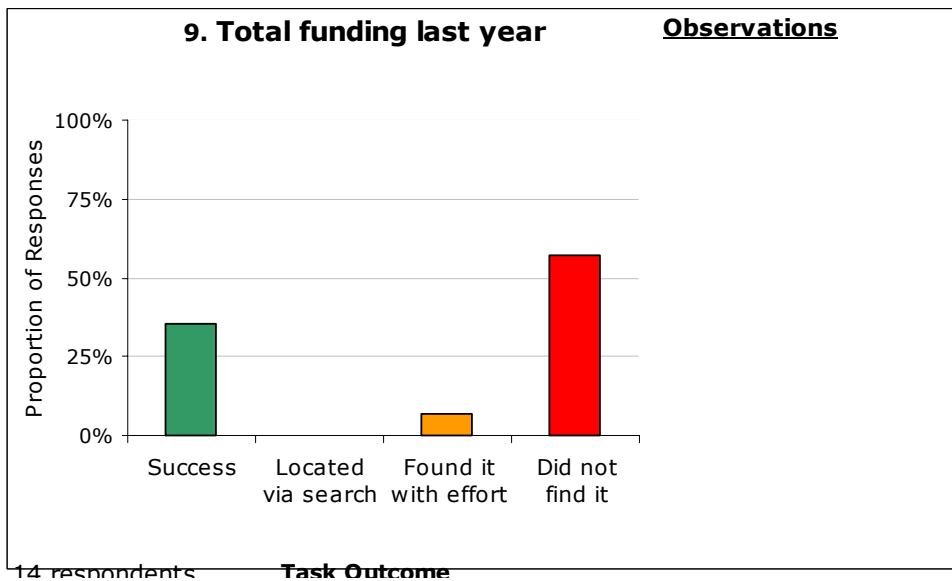
Also, consider drawing more attention to the disclaimer about what NIDCD will do with the user's information by using more descriptive text and moving the text closer to the email text field.



It was interesting that many people used search for this task. HFI suggests that the term "Clinical Trials" appear with the item on the home page. All respondents seemed to know the term. "Clinical Studies Seeking Patients" didn't always draw respondents' attention, perhaps partly because it's only half of the topic, and also because "studies" is not as good a word as "trials" in this context.



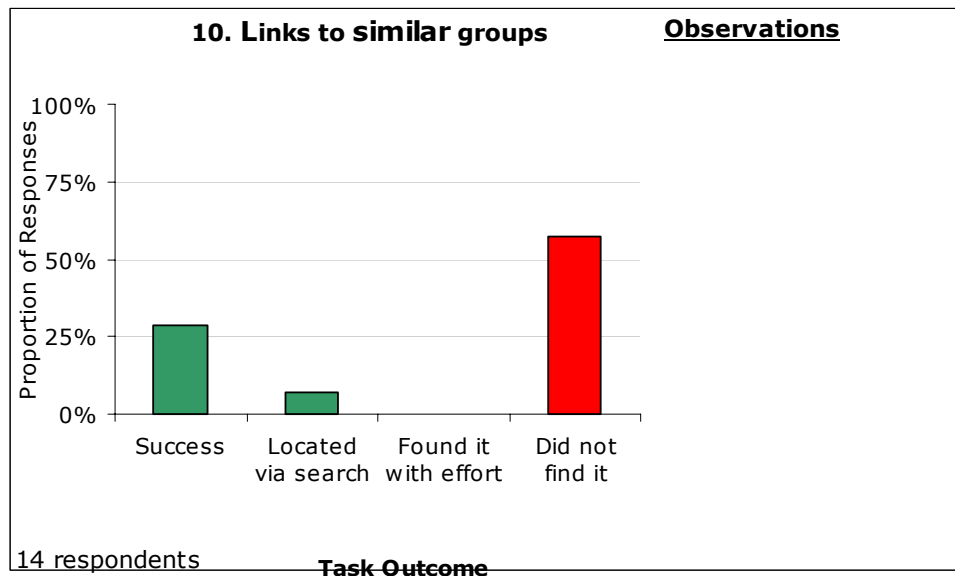
This is a difficult question to answer on the site, because the answer must be inferred. Getting it wrong amounts to a misunderstanding of the mission and services provided by NIDCD. More information about what NIDCD does and does not do would help with this misunderstanding. See suggestions above.



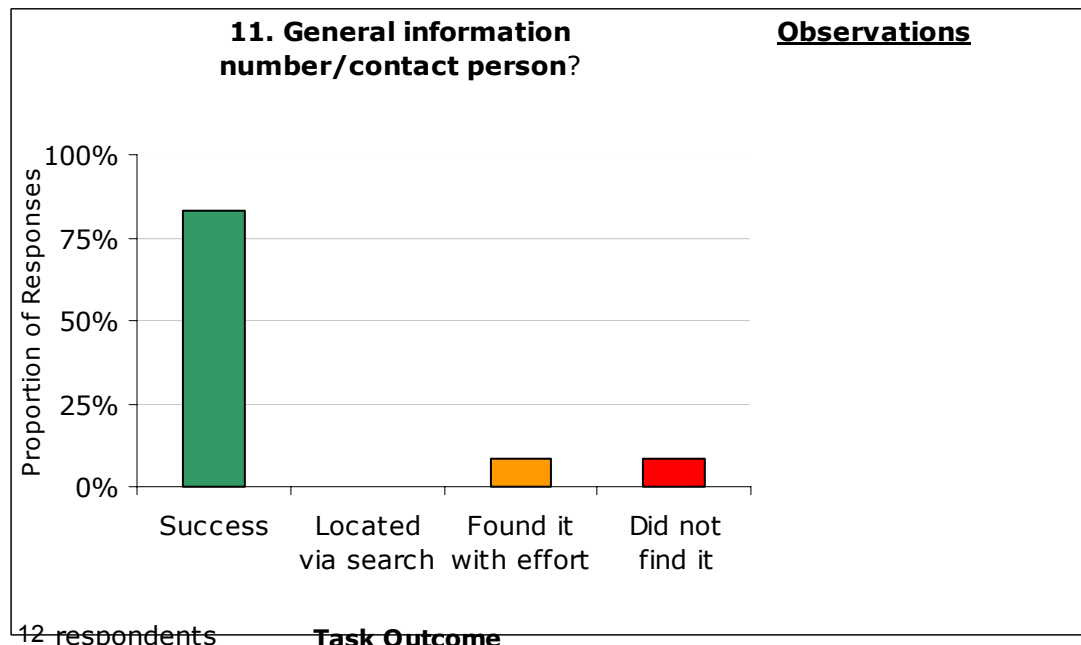
The answer to this question is buried pretty deeply in the site. HFI suggests that the information be provided with About Us, since knowing the answer, generally, is basic to understanding that NIDCD is a large agency that provides very substantial funding for research.

Additionally, provide a blurb about what the CRISP database is and what it contains on the NIDCD site. Many people found CRISP, and liked the idea of the database. Those who tried

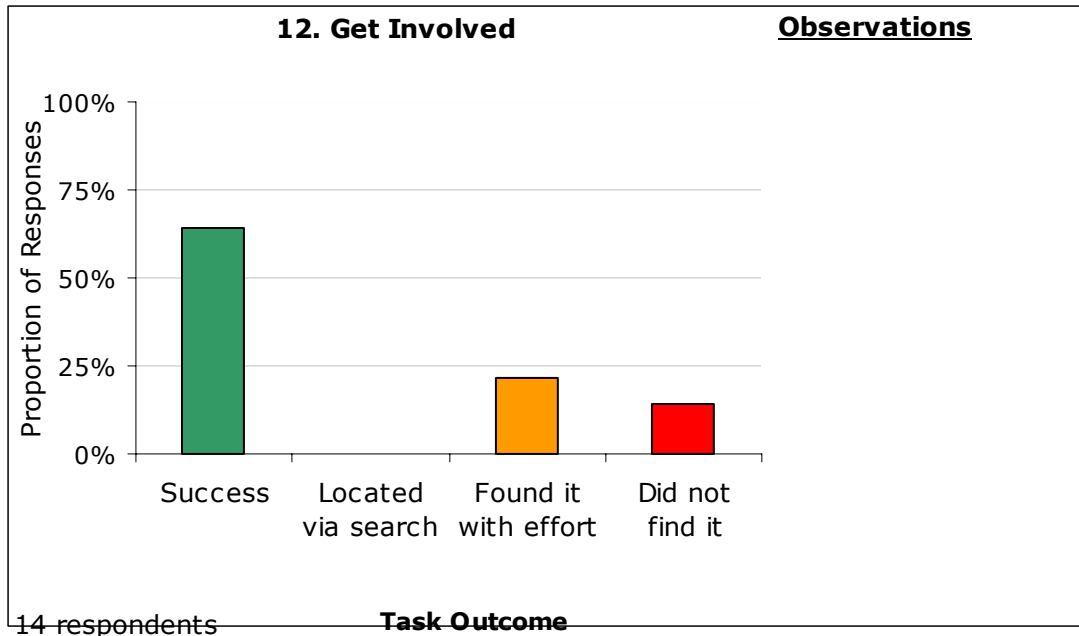
to use it were unable to figure out how to enter a query, however, so this aspect of CRISP needs some attention.



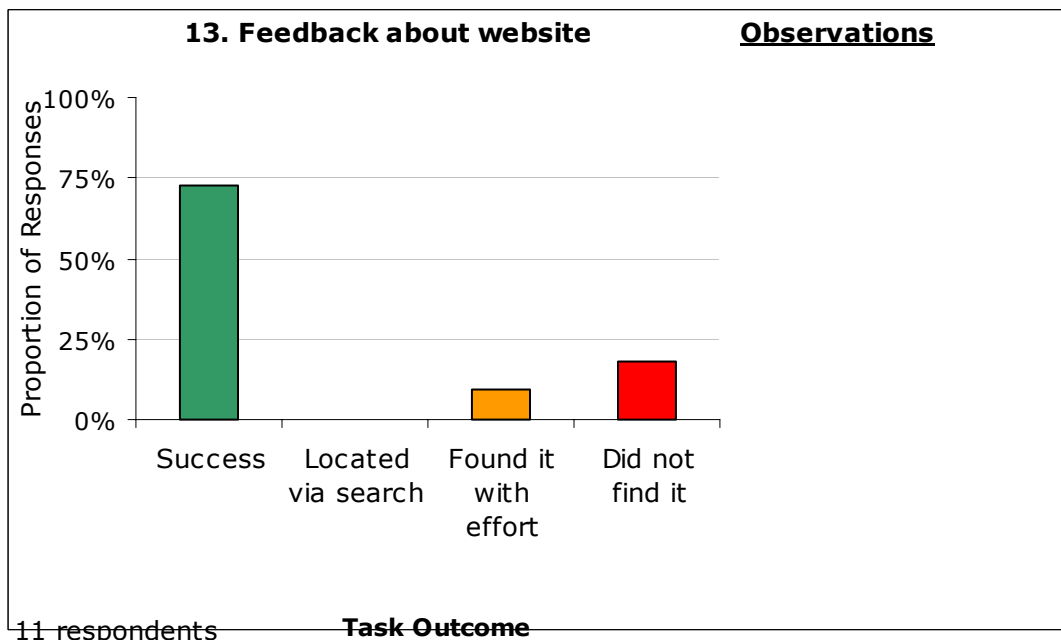
This question is probably important to NIDCD because many visitors to the site will be looking for such information. The problem is partly that some of the information is buried in other articles. HFI recommends collecting this information in one place.



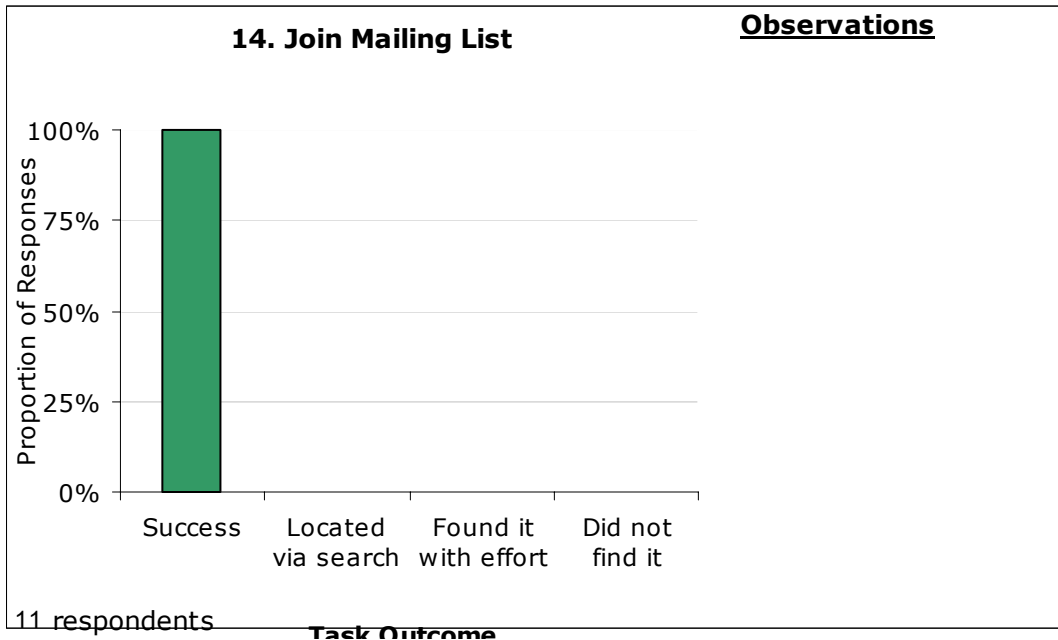
Respondents found the email response form quickly and easily, but had trouble finding the toll-free telephone number. If the telephone number is important to the organization, HFI recommends including it on the Contact Us page, with suggestions as to what it's appropriate to telephone about.



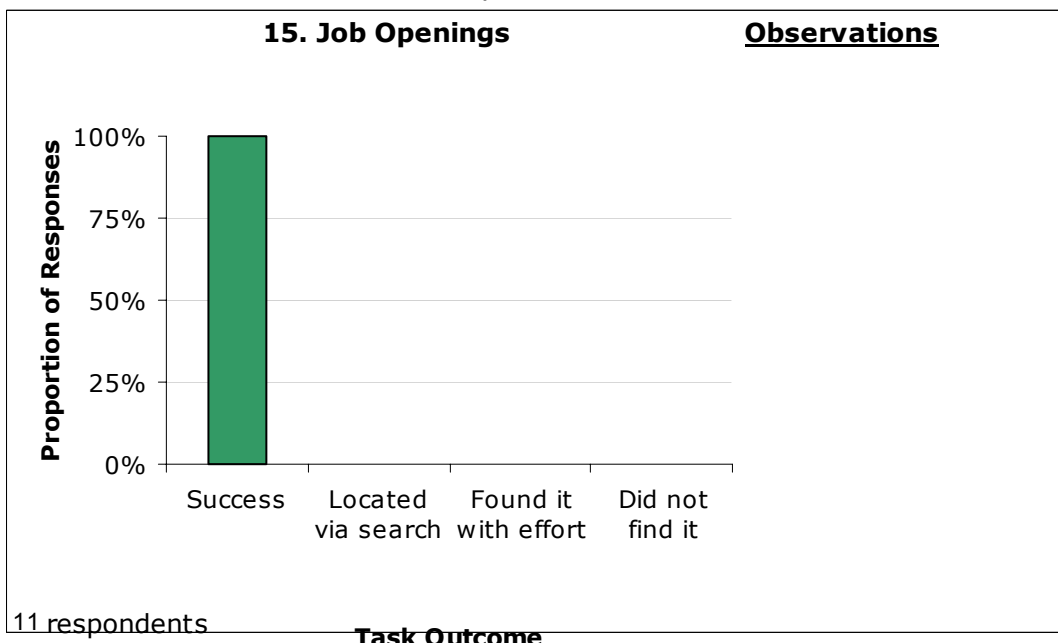
That some people had trouble finding this link is a result of it's placement on the page. Making the About Us section have equal status to the other Silo sections should help with this.



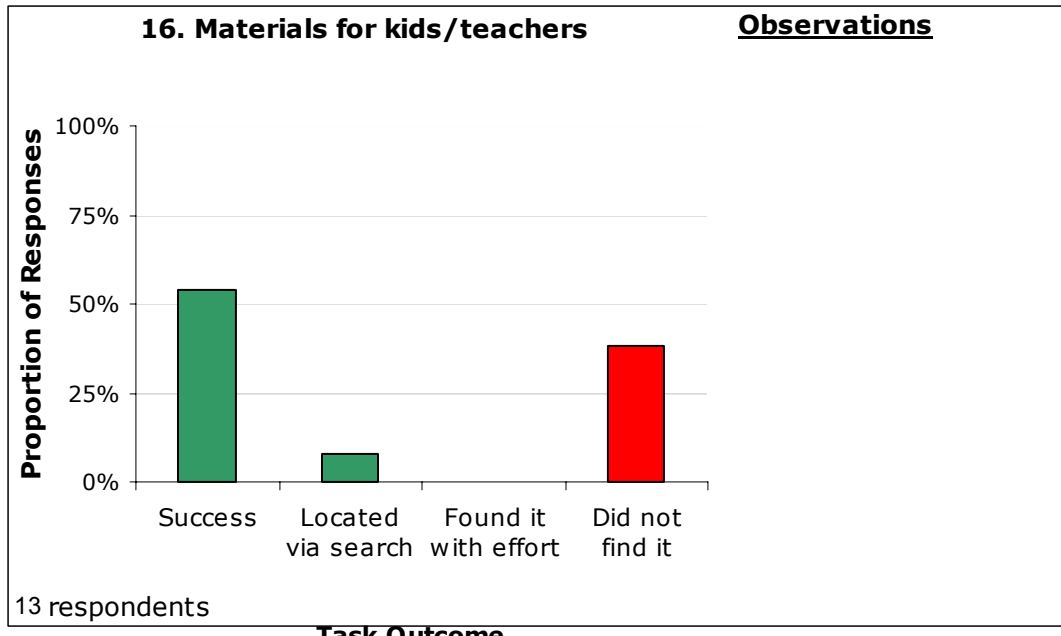
Some of the difficulty here was with confusion between About Us and Contact Us. Some of the subjects found the survey instead of going to Contact Us to send email. HFI suggests that the survey item could be better placed and better named. It could be featured in the body of the page, at the bottom of one of the columns, above the footer. Alternatively, it could be placed with the footer, to make it always visible. As for label, we suggest that "Rate our site" would be clearer than "Take our Survey" because it eliminates the possible misunderstanding that the survey relates to health or personal information.



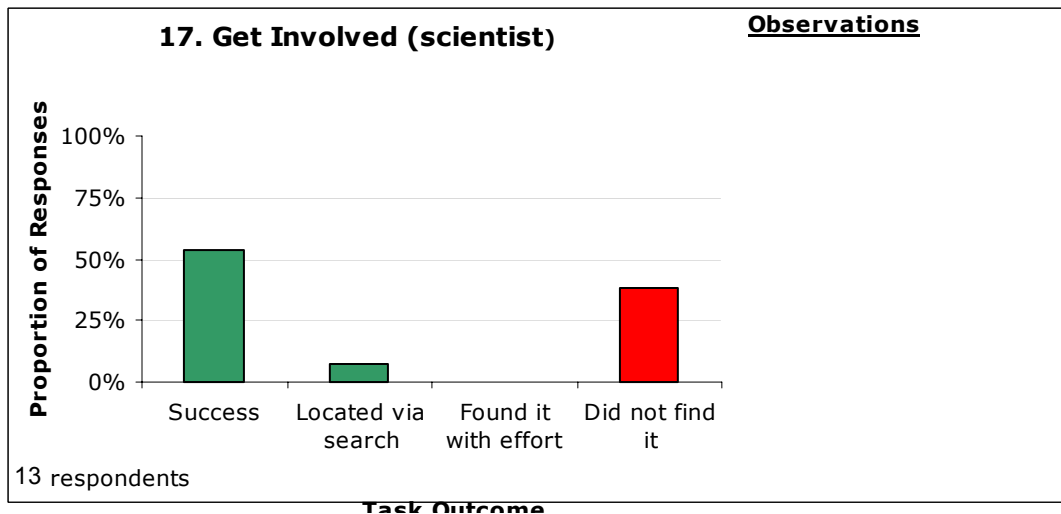
This is one of the grand successes of the design. Everyone saw the subscribe area and understood how to use it immediately.



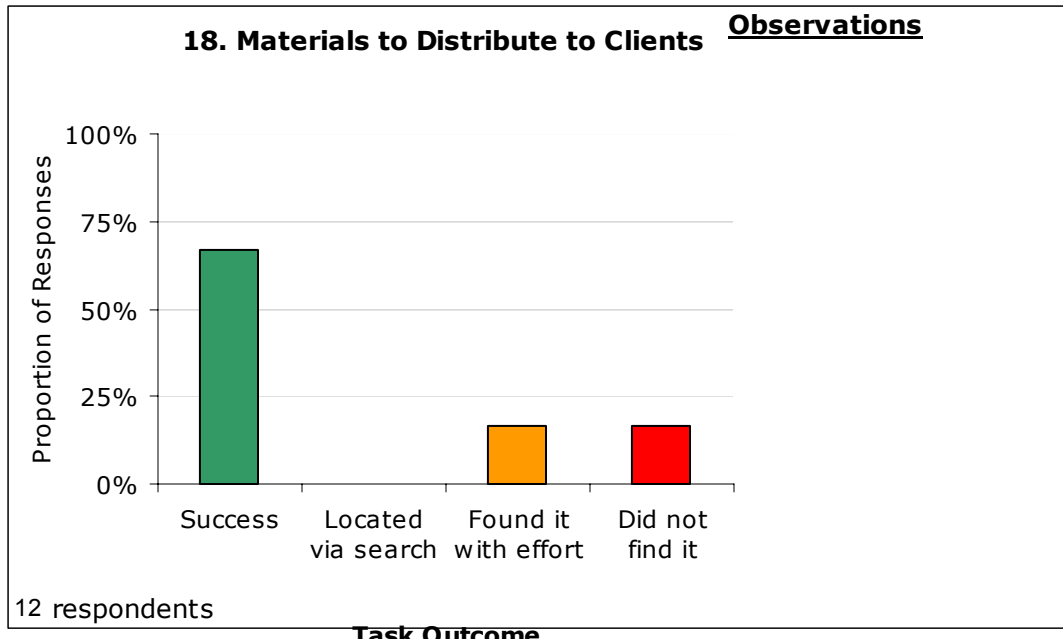
Can't argue with the success of this one, either.



Some subjects didn't immediately recognize "Science Education" as the right topic to try. We heard a number of suggestions, including "Resources for Children" and "Health Education Resources." Not everyone made the connection between "science" and "health" in the context of the site.

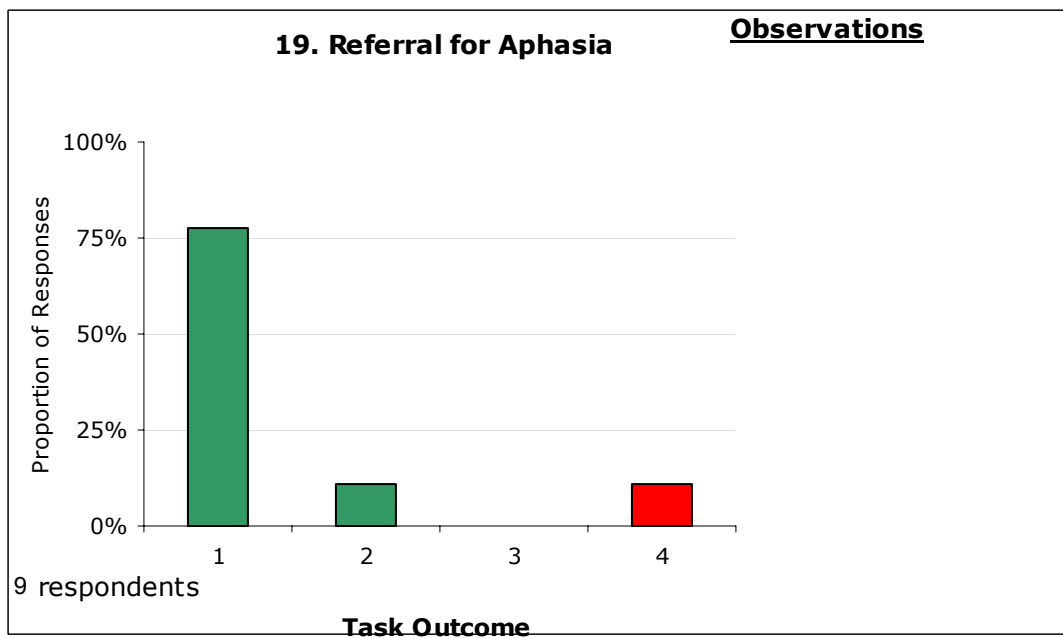


This item was hard for people because it was contained in the Wise Ears area, but without having looked there, there is no clue on the home page that this would be a fruitful place to look. The people who succeeded mostly went through the "Get Involved" link under About Us. See comments above about improving the visibility of the About Us silo.

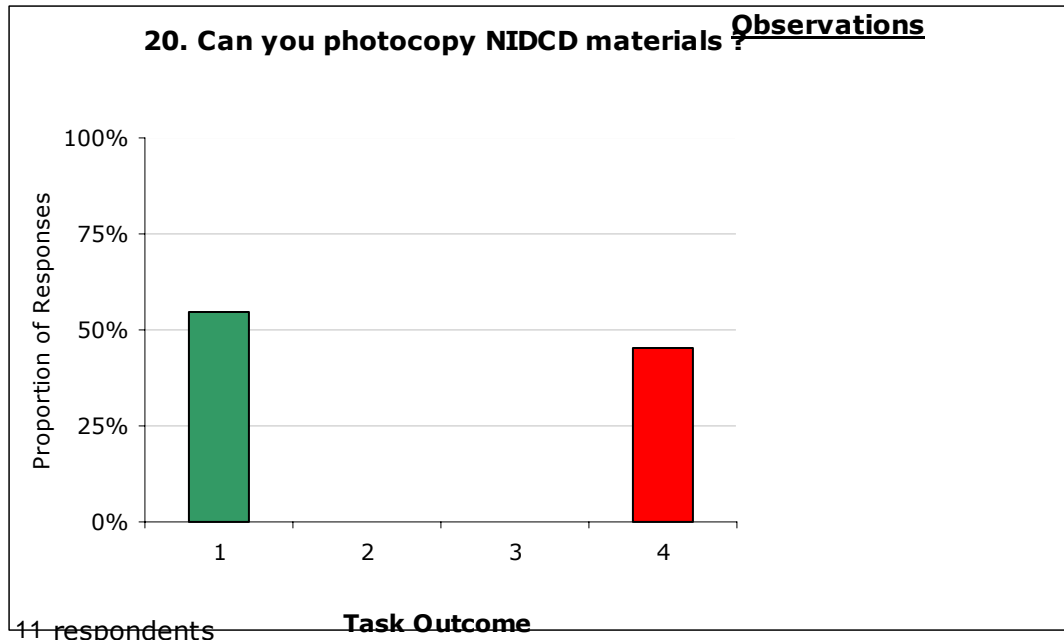


The difficulty here may relate more to terminology than navigation. The respondents had already been to the publications page, if they succeeded in the previous task. Also, we asked this question of students and other non-clinicians, for whom the difficulty of adopting that role for the purpose of our task could have caused some interference with performing the task.

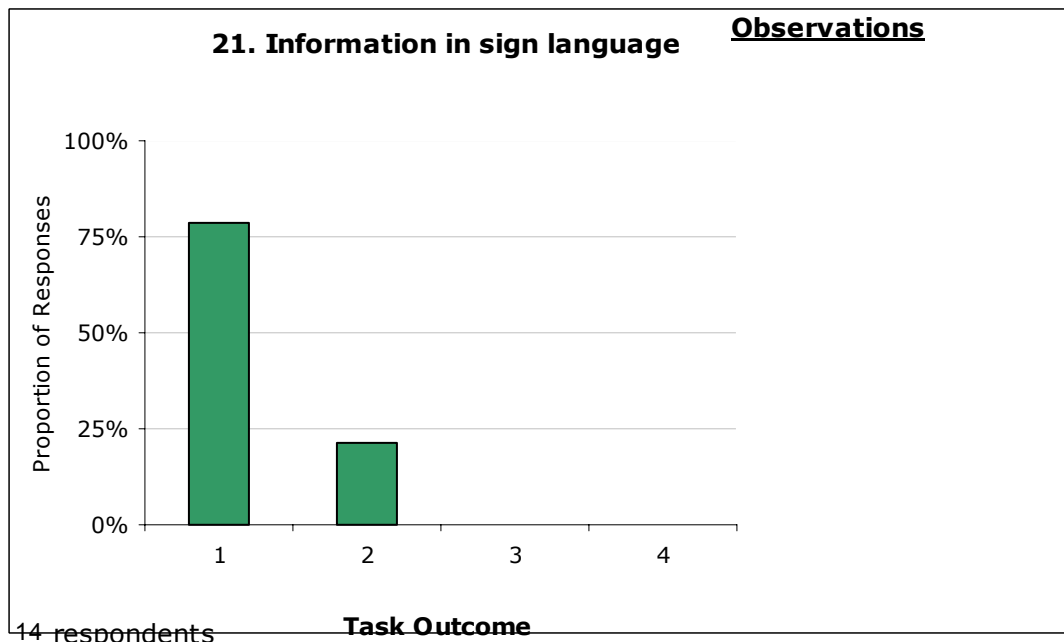
One participant remarked that the order of the buttons seemed illogical. From left to right, "Start Over," "Change Order," and "Submit Order" made more sense.



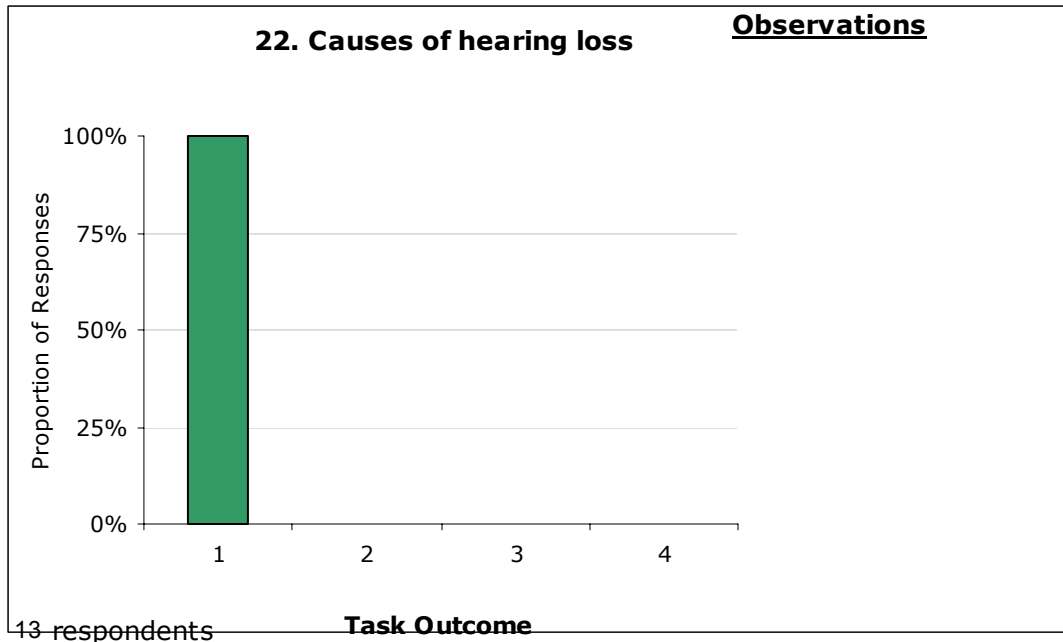
There was little trouble here.



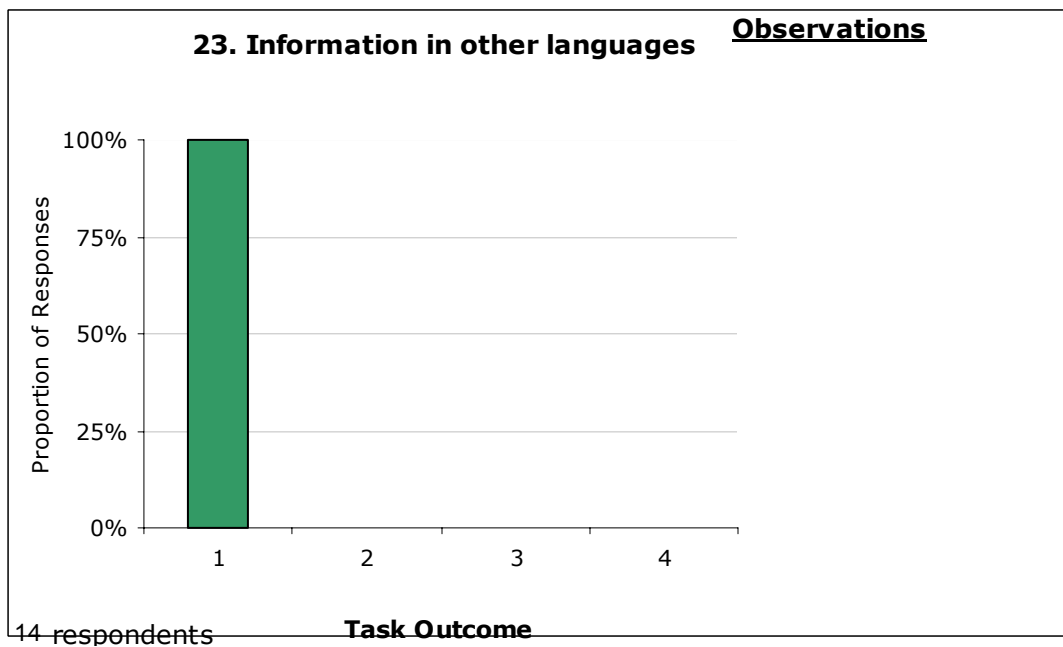
This result was surprising in that most of the subjects who failed had already had the required information within their view, in the course of performing prior tasks. The information, while present on the page, just wasn't read. HFI suggests including this information in a more task-appropriate place: in About Us by way of helping to explain who the organization is, and at the *bottom* of the order form, where it will be seen before placing the order.



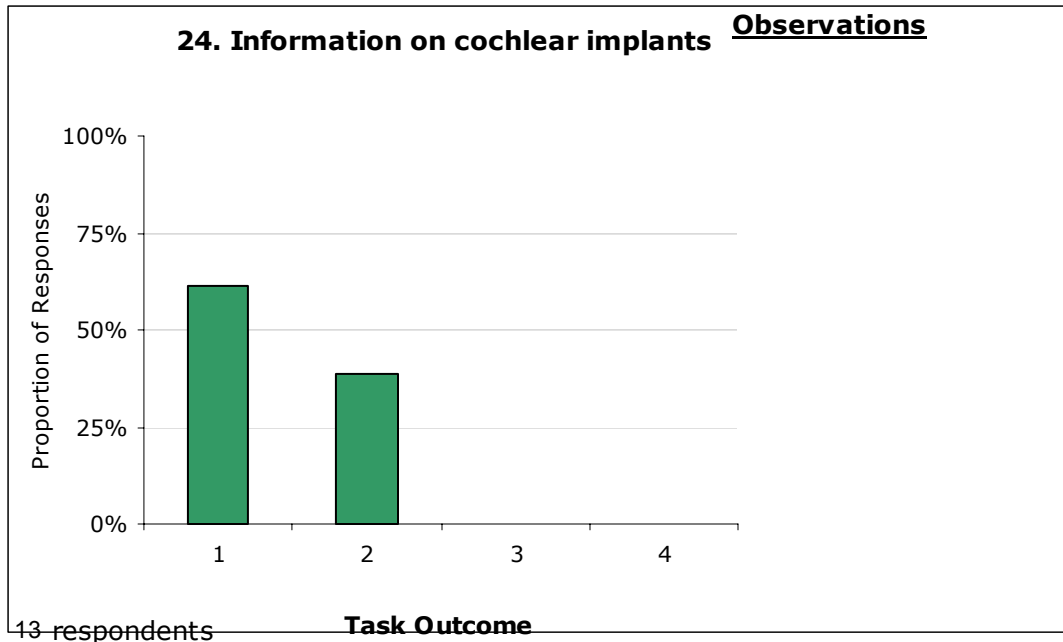
No serious problems here, save that some people missed the link and went to search to find the information. The difficulty that people did have was realizing that there was a useful link in the pulldown menu, and that they had to get the course from a related organization, since NIDCD doesn't provide courses itself.



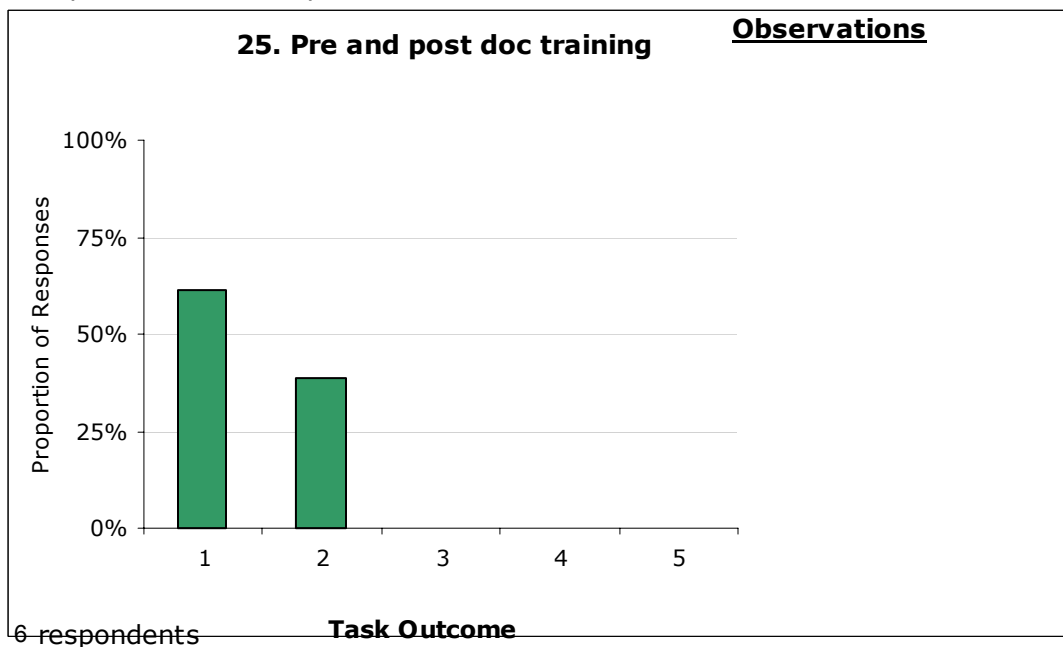
A slam dunk!



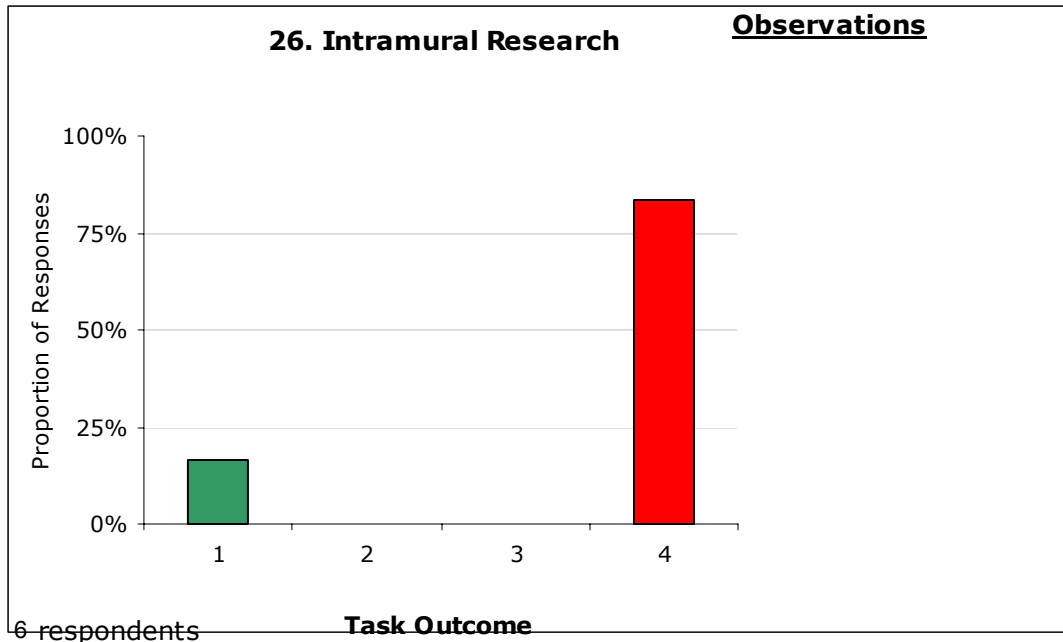
No problems!



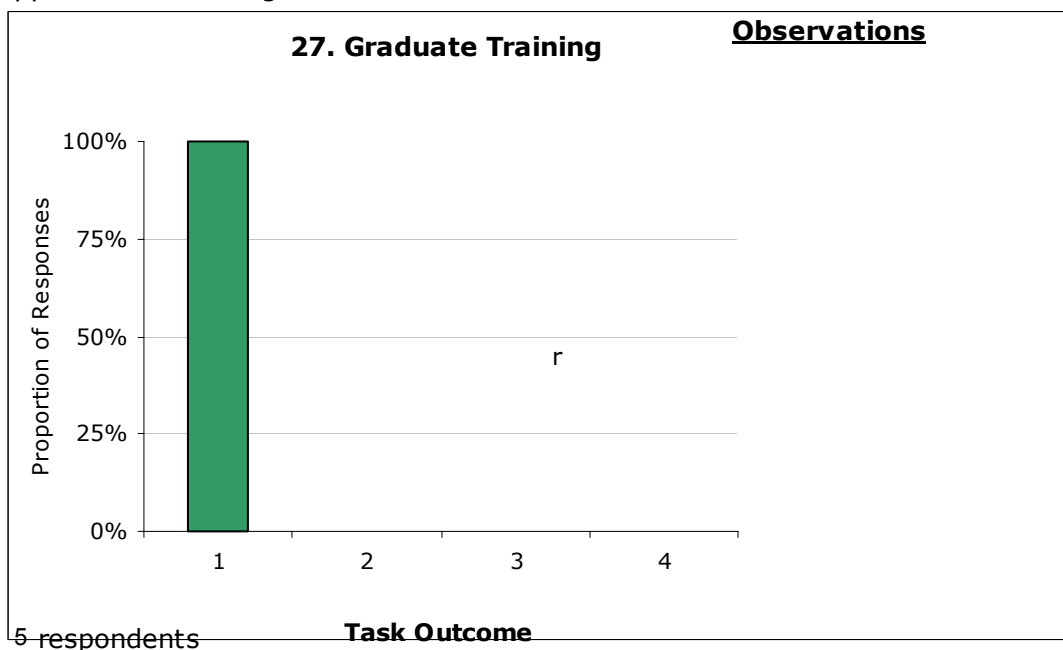
That many people searched for this reflects the specialized nature of the question, from their point of view. No problems with this.



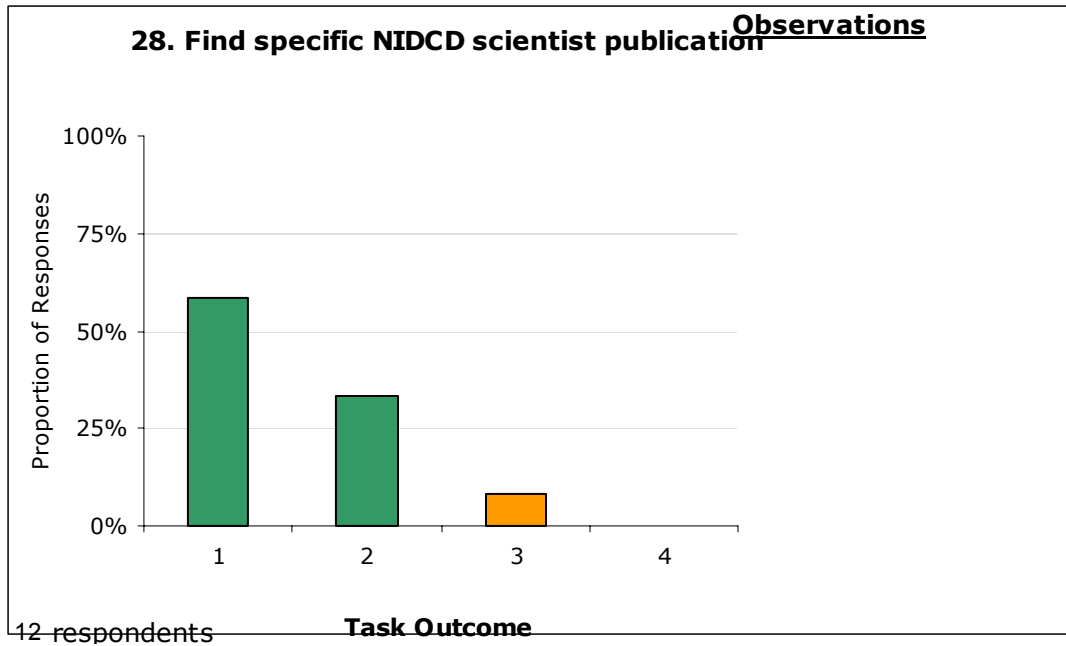
No problems here.



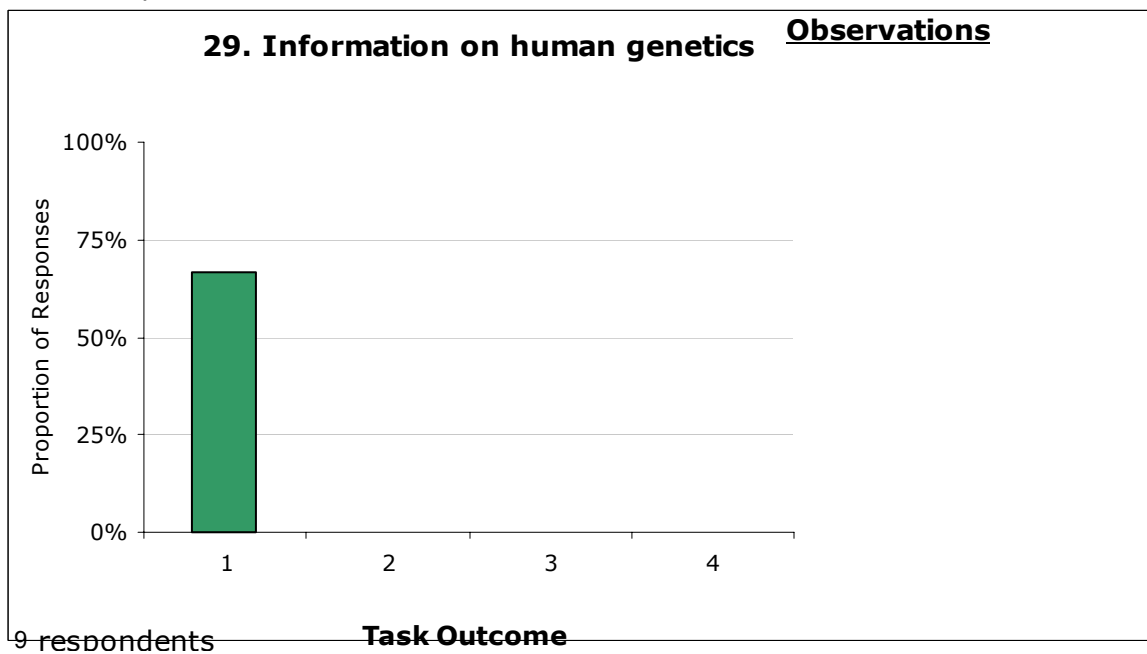
This information has to be inferred by reading a variety of materials on the site, and depends on familiarity with different areas of research. HFI suggests that this information is easily provided in passing in the About Us section. It's an important question to someone seeking research, because it determines in part whether NIDCD is an appropriate agency to approach for funding.



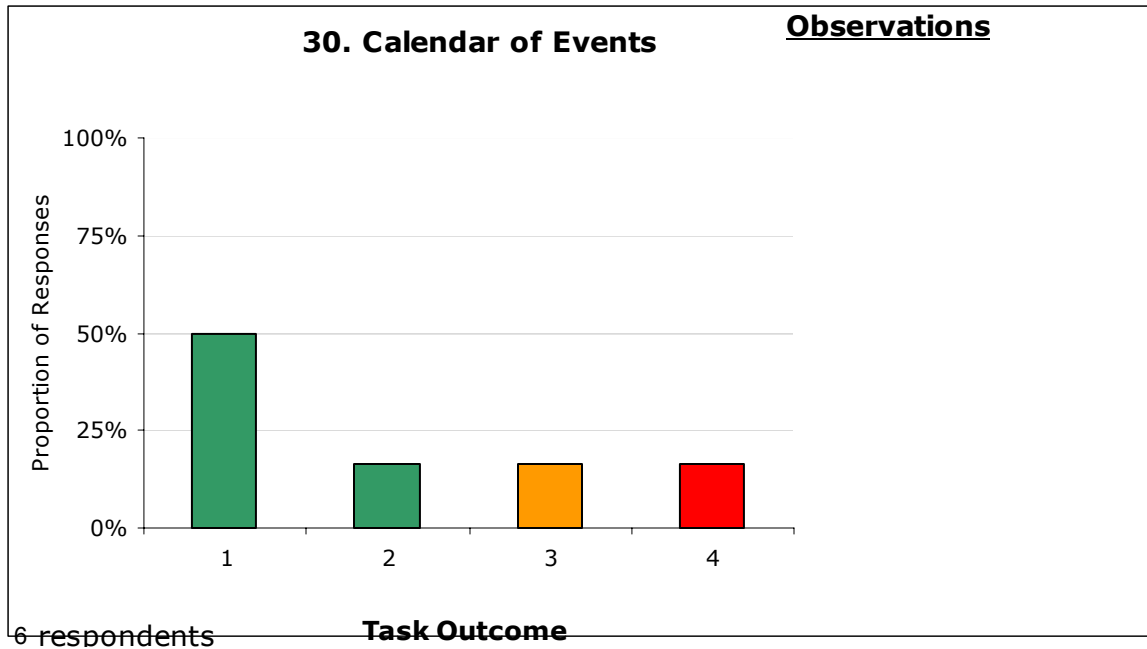
All is well here.



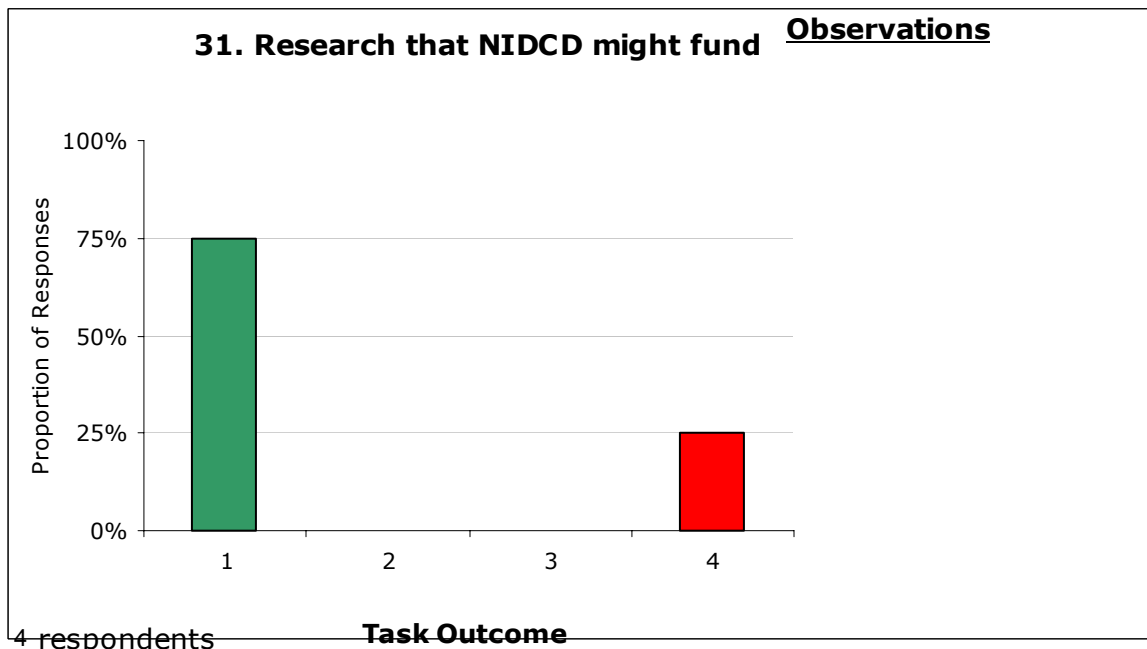
Search is an appropriate strategy for finding people. If that works well in the search engine, there's no problem here.



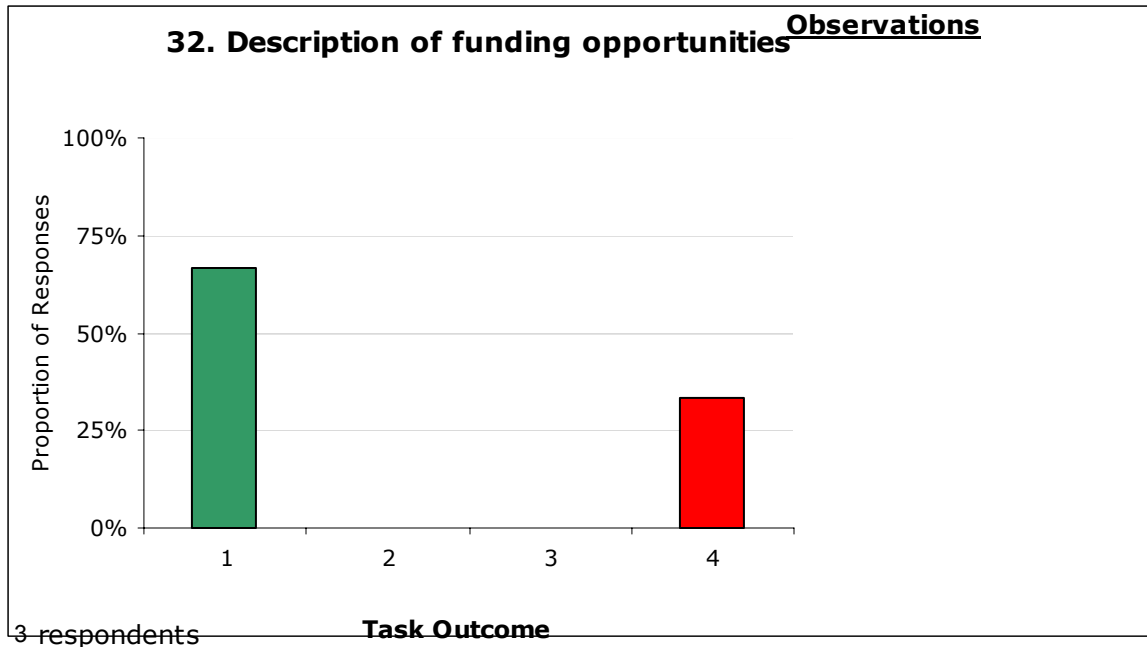
All's well.



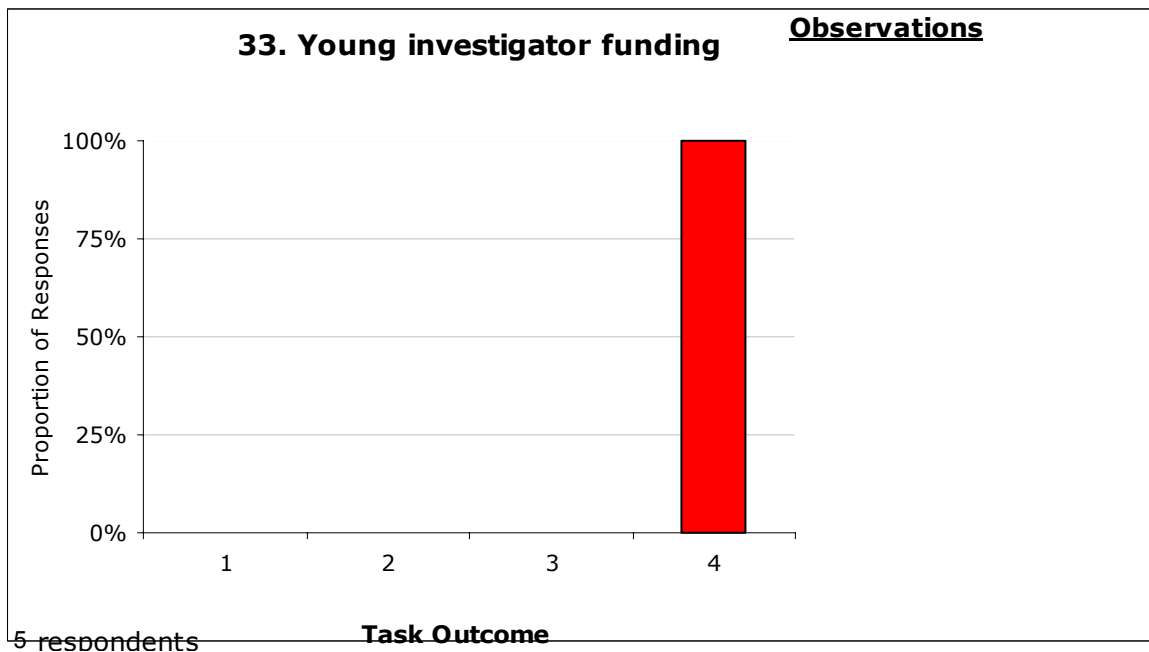
That people had trouble with this suggests that the item is not placed well in the site, and needs a new home. People didn't expect to find the calendar by following the More News link. An alternative fix would be to provide a link to the calendar on the home page.



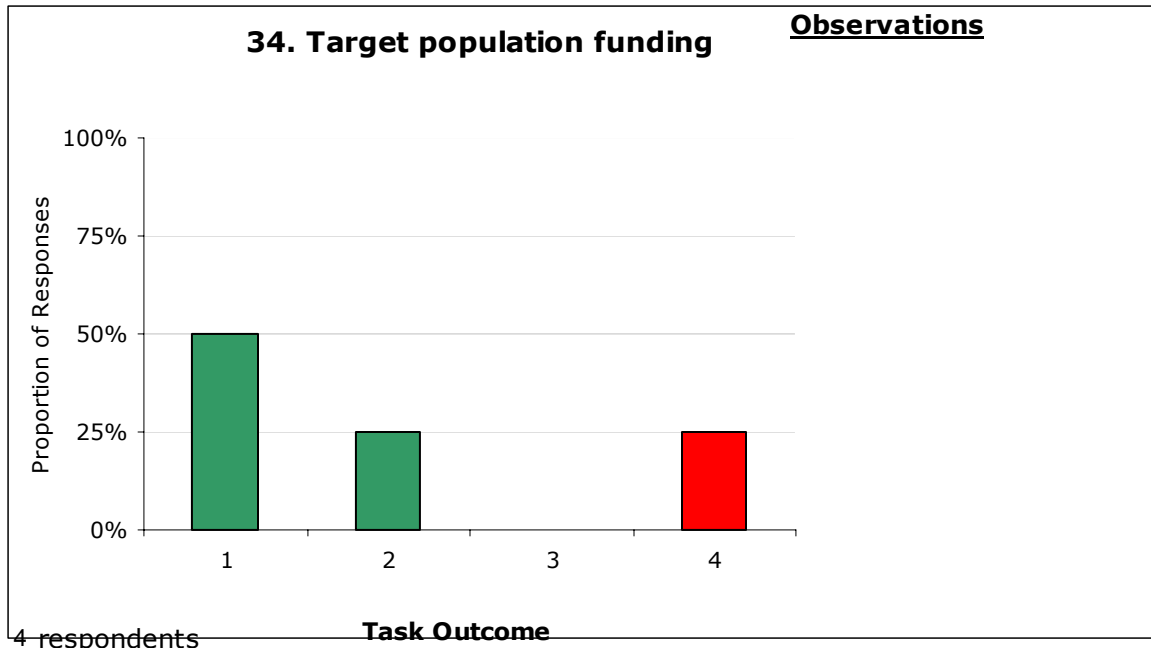
The failures here are a concern. The primary problem was that people could not distinguish between areas of research listed and funding opportunities, even though the areas are (we presume) pretty much the same. The problem can be resolved in part by making the information explicit on the Funding secondary page, and making the changes described above to make it more likely that users will go to that page.



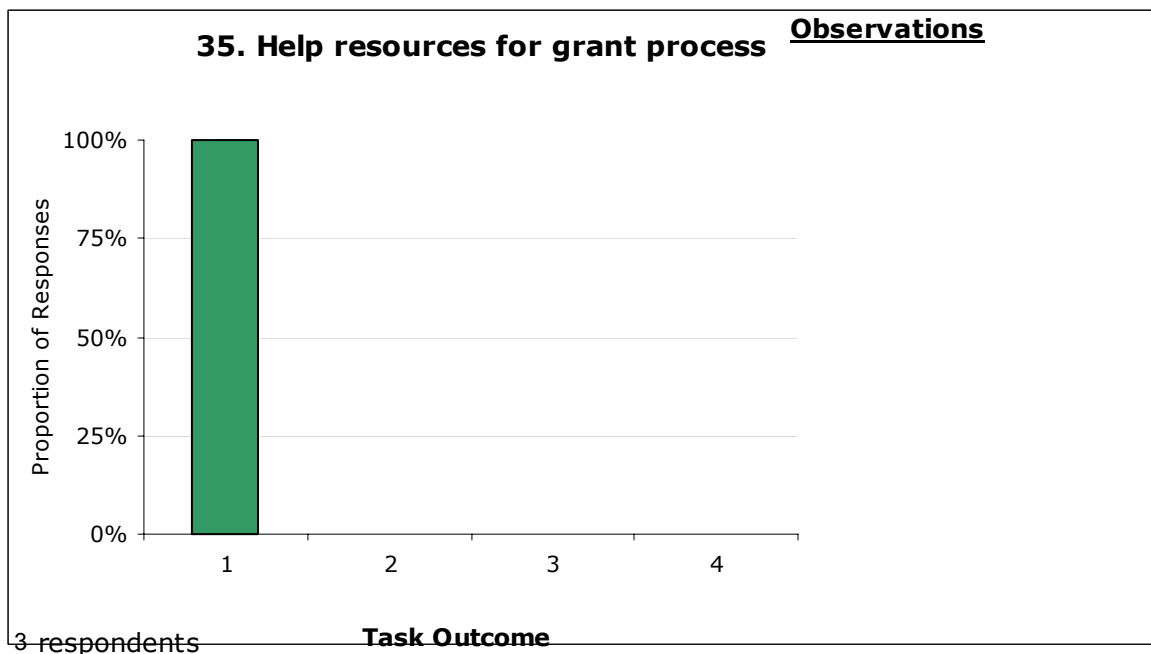
The comments for question 31 apply here, as well.



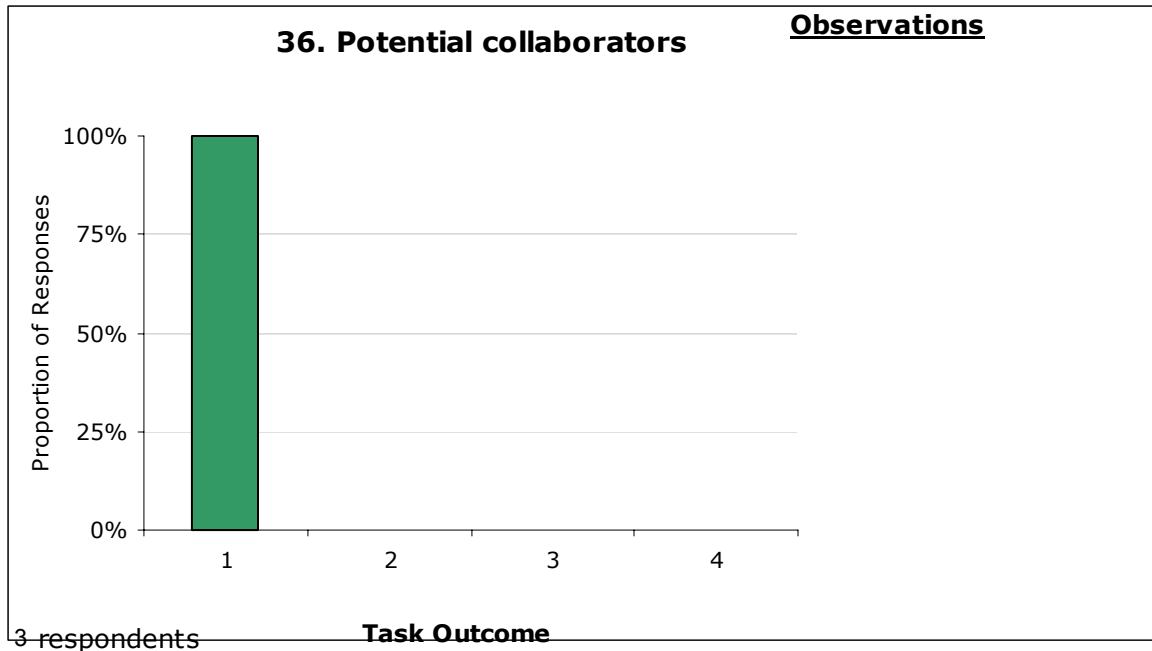
This is a serious failure of the funding menus. HFI suggests that item should be listed prominently on the second-level research page.



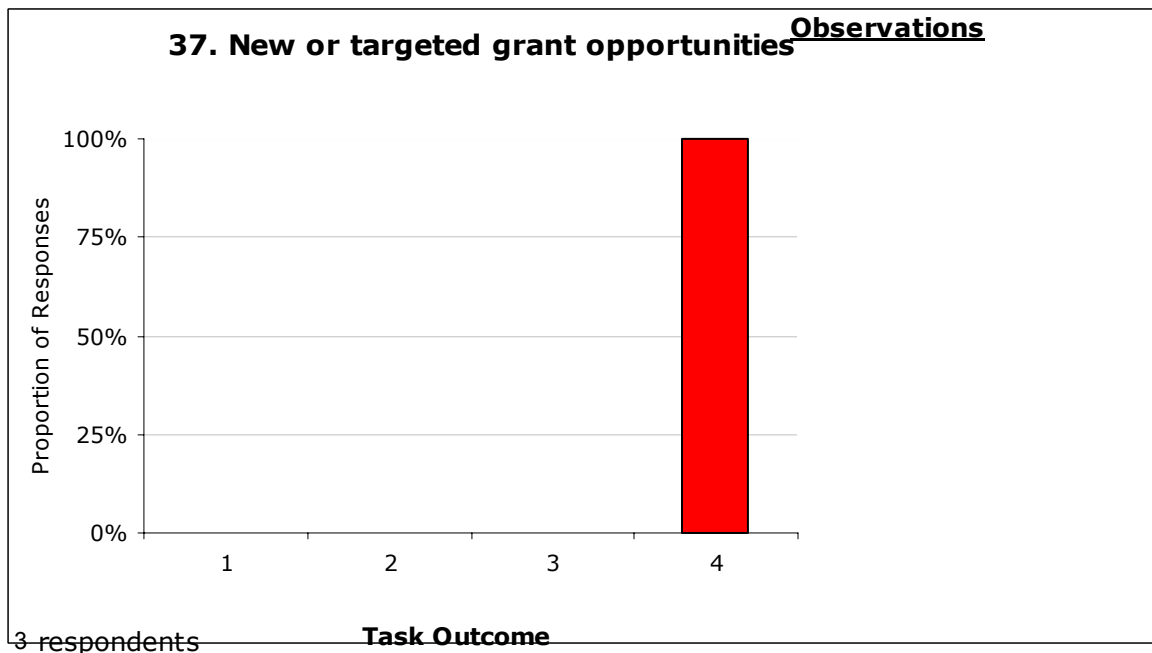
This is a serious failure of the site architecture. HFI suggests that the changes described above be made to increase traffic to funding second-level page. Also, the terminology there is not good: "Minority and Disability Supplements" should be changed to something like "Grants for minority researchers and researchers with disabilities."



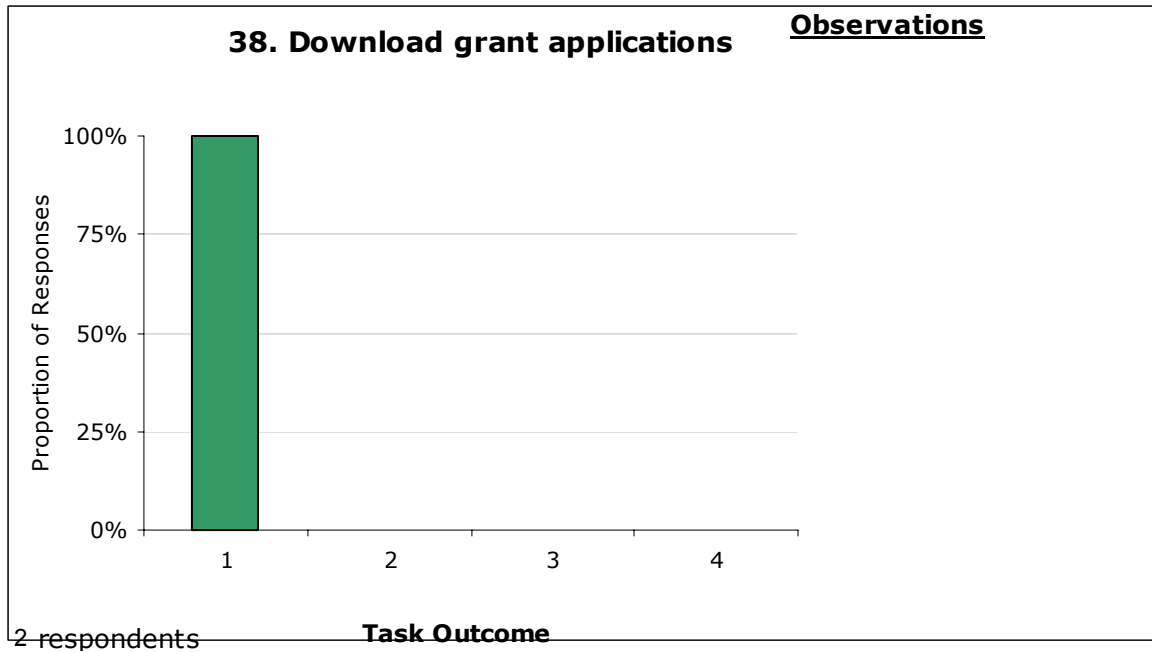
No problems here.



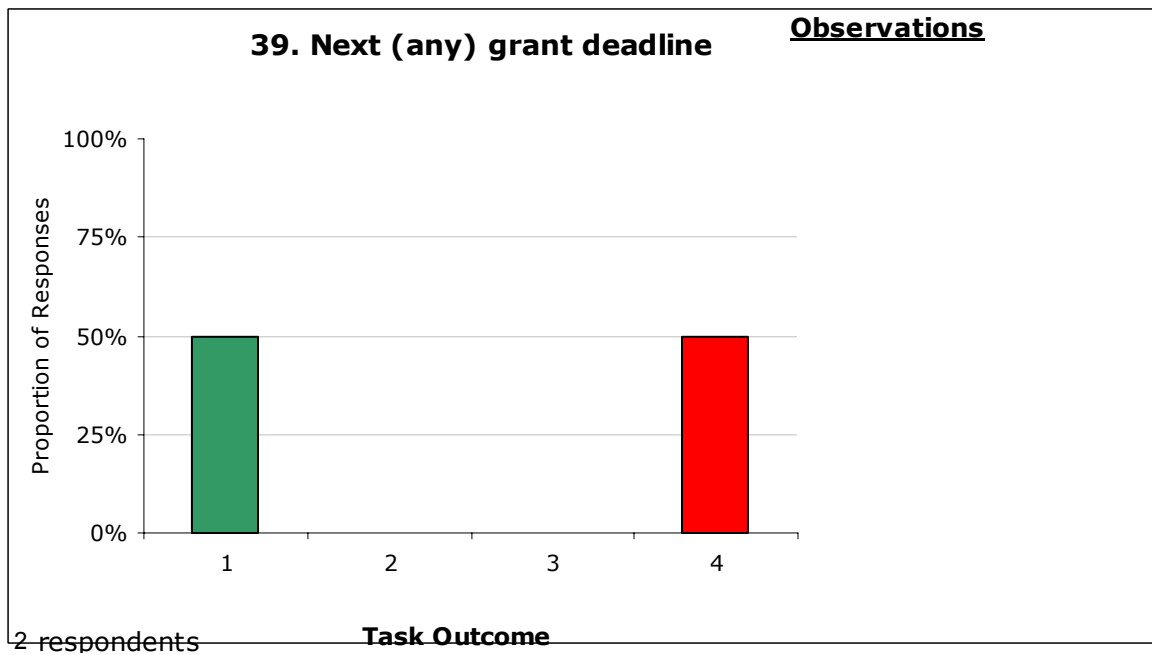
No problems here.



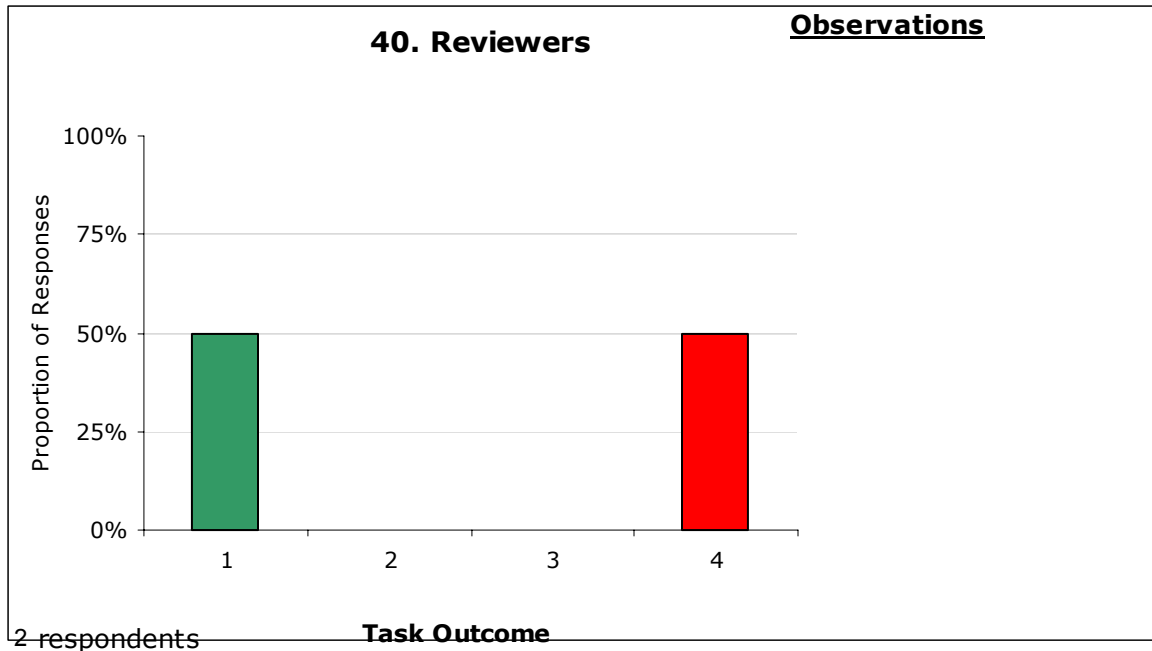
Funding cycle issues are not directly visible in the navigational structure. The addition of a funding calendar, critical dates listing, or something of the like, on the funding second-level page would help solve this problem.



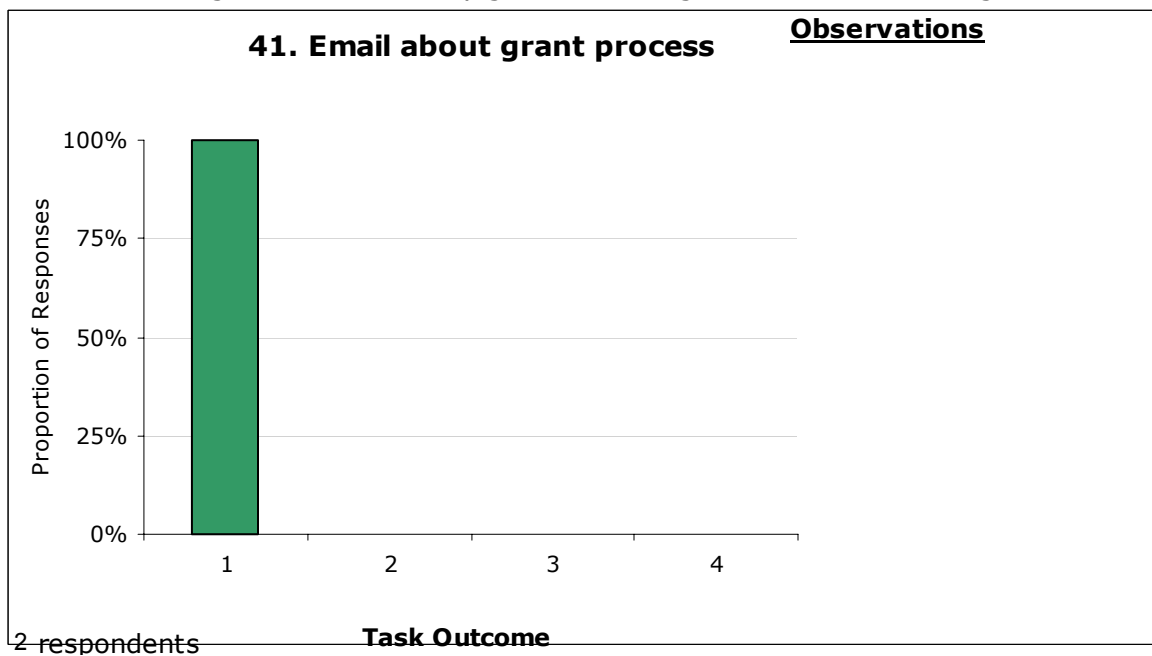
All good news here.



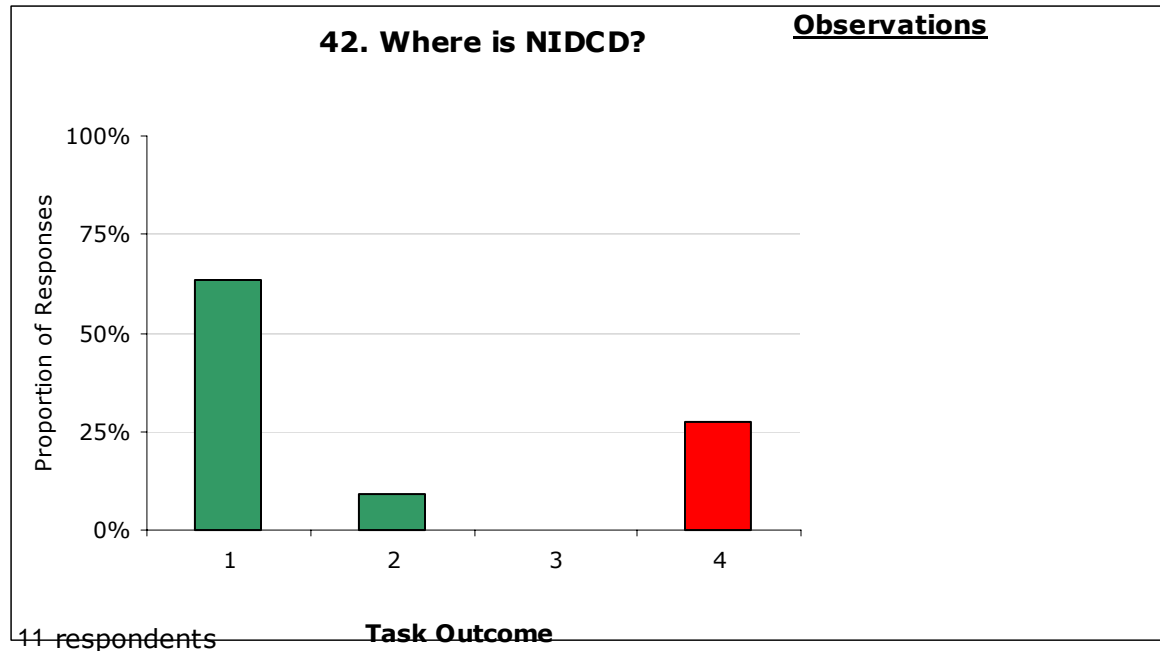
See comment on item 37, above.



The reasons for this failure are not clear to HFI. More investigation—perhaps by phone interviews with grant seekers—may give some insight as to what is wrong in this case.



Good news here.



The failures here were partly a result of the omission of the NIDCD address in the prototype. It should be both under About Us and Contact Us, if NIDCD wants to encourage paper mail and walk-in contacts.

1.5 Positive finding & conclusion

The focus of this report is to identify places of potential improvement of the NIDCD Web Site. However, it is important to note that for the most part, participants found the site pleasant and easy to use. On many occasions, participants commented on the usefulness of the site. They commented that the site was relatively easy to navigate. They found the information on the site relevant and interesting.

Users were pleased to learn that NIDCD has made an effort to provide public health information. They judged the reliability of the site content to be good.

Further, the redesign of the site has improved the usability of the site, based on our testing. Continuing to tune the design will make the site better still, and will help ensure that the new launch of the site will meet with public pleasure and approval.

Appendix A: Moderator's Guide

Usability Testing Moderator's Guide for NIDCD

Introduction

[Confirm consent forms have been signed]

Hi, I'm Dick Rubinstein (or Mona) from Human Factors International.
[Confirm participant's name.]

- We will ask you to do a number of fairly specific tasks...
- We are evaluating website, not testing you...
- We are videotaping the session, and there may be observers behind the glass.
- This is a prototype of the site. It is not complete, so you may not actually be able to complete each of our requests. That's OK.
- Would appreciate it if you can try to track where you are looking with the mouse pointer and talk aloud so we know what you are thinking/expecting....Will remind you from time to time...

Do you have any questions before we get started?

Overview Questions

Have you ever had occasion to research [or help someone] look for information on either health or hearing & sensory issues?

- What sources of information do you usually start with (off- or on-line)?

Have you ever looked or helped someone else look for information about possible funding resources. If so, where do you usually start?

Are you familiar with N-I-H, or other government agencies involved in health and medicine? Which others?

Are you familiar with the National Institute on Deafness and Communication Disorders? In what capacity?

Have you ever visited the NIDCD website before for either professional or personal reasons?

- What were you looking for?
- Did you find it?

Have you visited the site more than once? If so, how frequently (a few times, on grant cycles, once a month, once a week, more frequently?)

[Hand participant printout of new home page.] This is the design for the homepage for NIDCD?

- What type of site do you think that this is?
- What does it look like you can do on this site?
- Please circle the thing that you think you can click on. (Be sure to put a separate circle around the things that will take you to different places.)

- What would you expect if you clicked on them?

The NIDCD is an organization that conducts and provides funding for research on specific health related issues. Based on this page, what general research topics do you think the NIDCD focuses on?

Targeted Questions

Getting General and Health Information

1. How would you find information on the site about how to avoid hearing problems? [Wise Ears! Campaign highlight in RSB; *or* Health > Hearing > Noise Induced Hearing Loss]
2. Is there special information for parents to help them learn how to know if their child has an ear infection? [Health > Hearing > Ear Infections: Facts for Parents] *or* [Do You Know > RSB]
3. Imagine your second child is still not talking several months after her older brother had already been chattering up a storm. See whether there is information on the site to help you decide if this delay is something to talk to your pediatrician about? [Health > Speech > Speech and Language: Developmental Milestones]
4. Can you find any recent findings from research done at/funded by NIDCD? [Latest news; *or* News and Events section; *or* highlights within the research and funding sections]
5. How might you find information about what causes taste disorders? [Health > Smell & Taste > Taste and Taste Disorders]
6. Can you order an information pamphlet about dizziness on the site? [Order Free Publications > Balance, Dizziness and You]
7. Does the NIDCD do Clinical Trials? Is it possible to find a list of the Clinical Trials that are on-going? [Health > Studies seeking patients > Studies at NIDCD; *or* Research at NIDCD > Studies seeking patients > Studies at NIDCD; *or* Funding for Research > Funded research > Clinical trials around the country]
8. Does NIDCD have physicians to diagnose an individual's condition? [No.] [Site Information (footer)] *or* [Health > Find Out More button] *or* [Contact Us (footer)]
9. Please find information about how much research funding was provided by the NIDCD last year. [About Us > Plans and Budget > Congressional Testimony; *or* Funding for Research > CRISP]
10. How would you find links to other groups interested in similar health problems? [Health > Find related organizations]
- ~~11.~~ If you couldn't find the information you were looking for on the site, is there a general information number/contact person that you could call? [Contact us; *or* email address at bottom of pages; *or* Health > Call us toll-free]

12. Is there any way for non-scientists to get involved in the work that NIDCD promotes? [About Us > Get involved...]
13. How would you provide NIDCD with specific feedback about the website? [RSB > Take Our Survey] *or* [Contact Us]
14. How would you join a mailing list on the site? [RSB on home page > Subscribe]

Employment

15. Find out what job openings are available on the web site? [About Us > Jobs]

Preparing to Teach

16. Please find any resources or projects for elementary students on the site.
 - Are there any interactive demonstrations? [Health > Science education]

Medical Information for Health Professionals

17. NIDCD is involved in community action to reduce noise pollution. How would you find any information on the site about how you can get involved? [Wise Ears! Campaign highlight in RSB; *or* Health > Hearing > Noise Induced Hearing Loss; *or* About us > Get involved...]
18. Does NIDCD provide any information or resources that you can distribute to your patients? [Order Free Publications at top; *or* on Health page]
19. You have a patient (or a friend) who has been diagnosed with aphasia. Please find a referral to a specialist or other resources for that person to contact about her disorder? [Health > Find related organizations ; *or* Health > Voice, Speech > Aphasia]
20. Is it OK to photocopy NIDCD materials? [Yes. Site information ; *or* Publications order form]
21. You need to learn American Sign Language. Does NIDCD provide a resource? [Health > Hearing > Communication Options > American Sign Language: Quick Facts]
22. How would you find information on the causes of hearing loss? [Health > Hearing > pubs under Causes of Hearing Loss and Deafness]
23. How would you find information written in Spanish for your patient? [Health > Informacion en español]
24. You are seeing a patient who is a candidate for cochlear implant. Please find information on the site to help your patient understand what that means. [Health > Hearing > Cochlear Implants]

Training Information

25. Can you find information about pre- and post-doc training at NIDCD? How does one go about applying? [Research at NIDCD > Training and Employment; *or* Funding > Types of Funding > Training Grants and Fellowships]
26. Do individuals working at NIDCD focus strictly on basic research, or do they also participate in clinical research? [About Us > Mission] *or* [Research > About Intramural Research]
27. Can you get graduate training or advising at or through NIDCD? [Research at NIDCD > Training and Employment > Graduate Education Opportunities] *or* [Funding > Types of Funding > Research Training Grants]

Intramural Research Information

28. Andrew Griffith is someone at NIDCD. Find out who he is, and access any recent research papers he has written. [Research > Faculty > Griffith]
29. Can you find information on what is going on in Human Genetics? [Research > Areas > Human Genetics]

Research & Funding Resources

30. Can you find a calendar or listing of professional conferences sponsored by or related to work done at NIDCD? [News and Events > Calendar of events]
31. Where would you look to find out the types of research or research topics that NIDCD would be likely to fund? (multiple) [Funding > Types of Funding; *or* Research > Areas of research; *or* Funding > Clinical trials; *or* Funding > CRISP ; *or* Funding > Funding Opportunities > Past Funding Opportunities]
32. Where would you look to find descriptions of the current funding opportunities (RFAs/PAs)? [Funding for Research > Funding Opportunities]
33. Are there any grants that are specifically for new/young investigators? E.g., Postdocs [Funding for Research > Types of Funding > Research Training Grants and Fellowships]
34. Are there any special funding or training programs to support scientists with disabilities, deaf scientists, or minority scientists? [Funding for Research > Types of Funding > Minority and Disability Supplements]

For Researchers & Potential Grantees only:

35. Are there any resources to help investigators through the granting process? [Funding > Applying for Grants > How to apply/FAQ; *and* Contact staff]
36. Where would you look on the site to find potential collaborators for a research project? [Research at NIDCD > Areas of Research *or* Faculty > Alphabetical Listing]
37. Are there any new or targeted grant opportunities at NIDCD this cycle? [Funding > RFAs/PAs]

38. Is it possible to download a grant application? [Funding > Apply for Grants > Application Forms]
39. When is the next grant deadline? [Funding > Apply for Grants > Application Forms > Application receipt dates]
40. Can you find the names of the individuals who will review your grant proposal? [Funding > Review Process > CSR Roster]
41. If you were preparing a grant on taste receptors and were not sure if the topic was appropriate for NIDCD or just wanted to email someone about the process, how would you do that? [Applying for Grants > Contact NIDCD Staff]

Final Task-Related Questions (Everyone)

42. Can you find where the NIDCD is located?
[Bottom/footer of page *or* site information *or* Contact Us page]

Debriefing

Now that you've had a little time to use this site, is there any other information or service you would want to get there that you didn't find?

What have you found in using this site is different from similar sites, if anything? (What makes it different)?

Are there any terms or words used on the site that you think might be confusing?

If participant did not use pull down menu (on front page), search function, or breadcrumbs during the test, ask if they noticed or understood how to use these features.

Do you have any final comments or questions about the site or the usability test we have just conducted?

Thank you for taking time out of your busy schedule to help us ensure this site is as usable as possible.

The receptionist will have the thank-you fee for you at the door.

Appendix B: Screener

Recruiting Screener NIDCD

Contact Information

Name: _____ Email: _____

Daytime Phone Number: _____ Evening Phone Number: _____

Address: _____

Session Information

Time of Interview: _____ Honorarium: _____

Confirmed participant? Yes No

Hello, my name is _____, and I am calling from House Market Research in Rockville, MD. We are looking for people that would be interested in evaluating a website dealing with deafness and other communications disorders. You would be asked to use the website while a interviewer asks you questions about what you like and don't like about the website. Each session lasts an hour and you will be reimbursed (*\$150 for Doc, Scientist or Comm Specialist, all others \$100*) for your time. The sessions take place in Rockville on October 1 or 2. Would you be interested in participating?

If yes: Great. I just need to ask you a few questions to determine if your background matches what we are looking for. Do you have about 2 minutes?

If no: No problem. Thank you for your time. Do you know anyone else that might be interested in this research project?

1. Gender (*do not ask but recruit mix*): Male Female

2. What company do you work for? _____ (*Thank and defer if work for NIDCD*)

3. What is your occupation? _____

Mark which category they fall into:

Total 8 from Group A:

- ☐ Doctor (1 or 2, ENT or Pediatrician preferred)
- ☐ Scientist (1 or 2, Research in Language, Sensory Perception, Psychology (Sensation, Biopsych, Cognition, Psycholinguistics))
- ☐ Communication Specialist (2 or 3, Speech Pathologist, Audiologist)
- ☐ Nurse (1, preferably pediatric or geriatric nurse, but general OK)

- ☐ Graduate/Medical Student (2, same areas as Scientist)

Total 8 from Group B:

- ☐ Undergraduate Student (1 or 2, any major)
- ☐ Parent of Patient with deafness or a communication disorder (1 or 2)
- ☐ Patient with deafness or a communication disorder (1 or 2, prefer one over 55)
- ☐ Science Teacher (1)
- ☐ Librarian (2)

4. Approximately how many hours per week do you use the computer?

- ☐ 1 to 5 hours (*Thank and defer*)
- ☐ 5-25 hours
- ☐ 25-35 hours
- ☐ more than 35 hours (*Thank and defer*)

5. Have you purchased any item from the Internet within the past year?

- ☐ Yes
- ☐ No (*Thank and defer*)

6. In which category does your age fall into?

- ☐ Under 18 (*Thank and defer*)
- ☐ 18-30
- ☐ 31-40
- ☐ 41-50
- ☐ 51-60
- ☐ Over 60

7. What is your ethnic background?

- ☐ Caucasian
- ☐ African American
- ☐ Asian
- ☐ Latino
- ☐ Other: _____
- ☐ Does not want to answer

8. The study session will be videotaped for internal review only. No one except the project team will see the tape, and your name will not be associated with the videotape or any other documents. Would you be willing to be videotaped?

- ☐ Yes
- ☐ No (*thank and defer*)